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# Achieving Cross-Border Government Innovation

DELIVERING AND ENABLING  
IMPACTFUL CROSS-BORDER  
SOLUTIONS

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REPORT 3 - FOREWORD

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Innovation has long been at the heart of humanity's progression and growth. In an ironic twist, it is now the key to our survival. Climate change and disease do not discriminate between borders and the necessity of collaborative innovation efforts to meet these challenges is now clearer than ever.

Over the last two years, governments have been faced with the need to construct agile models and drive innovative solutions across borders to mitigate the impact of increasingly unpredictable global threats. Now is the time to consider how best to facilitate an innovative global community to take on humanity's greatest threats with new vigour.

In my experience, the shared challenges associated with an era of rapid environmental, social and economic change are best tackled when innovators work together, leveraging one another's expertise, capabilities and resources.

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Only through cross-border collaboration can we achieve truly impactful regional and global innovation.

This report, the third and final in the series, is timely. It sets out some of the key examples of how governments are collaborating on innovative approaches to collectively deliver genuinely impactful cross-border solutions. Importantly, the report provides recommendations for governments to drive the evolution of public sector innovation globally.

When it comes to cross-border collaboration, we need to think about initiatives on both a regional and global level. This helps us to identify how various solutions can protect against challenges such as the socio-economic risks caused by the instability of deteriorating natural environments and extreme weather events.


Unsurprisingly, some of the best examples of global collaboration efforts are in the field of climate change, the world's most pressing challenge. For instance, the CivTech Alliance project involves policy makers from across Europe, North America and South America, and aims to develop a high-impact scaling programme for climate tech companies, enabling them to receive funding and advice to increase the global impact of their innovations.

Some of the most impactful innovations are born from partnerships between neighbouring states facing challenges, such as the impact of climate change on a particular ecosystem that extends across countries. The OFIDIA2 wildfire mitigation programme between Greece and Italy comes to mind.

The most impactful innovations are highly targeted. Identifying specific sectors for collaboration can maximise the impact of innovations by ensuring that the optimal stakeholders, talents and skills are engaged and adequate resources are drawn upon. In healthcare, there are strong examples of multiple public health stakeholders working together to unlock the potential of global cross-border collaboration to jointly deliver health services to citizens of numerous countries.

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All these initiatives are characterised by a common will between governments to share experiences, resources and knowledge to deliver mutual benefit. It is promising to see policy makers from across regions collaborating with such energy and readily willing to share.

As global resources become more stretched amid ongoing economic headwinds, it is increasingly important that we seek efficient ways of achieving impactful innovations. And every country has a role to play. Developed nations yet to actively participate in cross-border innovation efforts must ask themselves why they are sitting on the side-lines – and what is the cost not just for the population but for the wider region and the global community?

We have a collective responsibility to enable impactful cross-border solutions as we navigate unpredictable climatic, political, economic and social challenges. The case studies in this report indicate a shift in how governments are working together to achieve common goals, not least the SDGs.

But there is room to improve, and we must redouble our efforts to crack impactful cross-border innovation. We must continue to ask ourselves: how do we want the future of cross-border innovation to look and how can we achieve it?

In my personal experience, as a public employee of the UAE Government, I have witnessed first-hand the far-reaching benefits of cross-border collaboration as part of a wider strategy to create impactful innovations. It is vital that we document and evaluate the outcomes of these efforts to build an accurate picture of the world's innovation landscape and learn how it can be improved. In this way, OECD's and the MBRCGI's reports play a vital part in empowering impactful transnational innovation and ensuring humanity has the tools it needs to meet tomorrow's challenges.



## REPORT - 3

# Introduction

This is the last in a series of three reports on Achieving Cross-Border Government Innovation that document key findings and tell important stories about the innovative ways in which governments and their partners are collaborating to tackle cross-border issues, ranging from regional challenges to the most pressing global issues of today.<sup>1</sup> These reports also seek to surface core challenges and success factors associated with cross-border government innovation, and make key recommendations to help governments pursue and obtain the most from cross-border innovation initiatives, building on existing OECD best practice principles on international regulatory co-operation and other relevant OECD work streams.<sup>2</sup>

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<sup>1</sup> See <https://cross-border.oecd-opsi.org> for all reports in this series. Details about the broader context for this work can be found in the first report Governing Cross-Border Challenges.

<sup>2</sup> It is important to note that not all cross-border government efforts fall squarely under the header of “innovation”. Collaboration between governments over many years and in different areas is covered by OECD work, including International Regulatory Co-operation (<https://oe.cd/irc>), regional innovation reviews and studies (<https://oe.cd/il/reg-innovation>, <https://oe.cd/irl-innovation>), development co-operation (<https://oe.cd/dev-coop>) – including for climate resilience (<https://oe.cd/climate-resilience>), understanding the transboundary impacts of public policies (<https://oe.cd/xboundary-impacts>), formal recommendations on cross-border co-operation in the enforcement of laws against spam (<https://oe.cd/rec-spam>) and protecting privacy (<https://oe.cd/rec-privacy>), and cross-border governance arrangements for science, technology and innovation (<https://oe.cd/il/xborder-sti>).

**Figure 1: Key inputs for cross-border innovation efforts**



This series is an outcome of the longstanding partnership between the OECD Observatory of Public Sector Innovation (OPSI) and the UAE Mohammed Bin Rashid Centre for Government Innovation (MBRCGI).<sup>3</sup> Over the last year, OPSI and the MBRCGI have worked together to better understand these issues by gathering and synthesising a number key inputs (Figure 1).

In the first report, Governing Cross-Border Challenges, OPSI and the MBRCGI identified a range of key activities undertaken by governments and their partners. These include: putting in place innovative governance bodies to co-ordinate cross-border innovation; building innovation networks to support horizontal linkages; and exploring emerging governance systems dynamics, such as co-governance and co-funding among partners.

The second report, Surfacing Insights and Experimenting Across Borders, discussed how a

growing number of governments have employed other novel methods to bring forth new thinking and test potential innovative solutions. In particular, it covered themes and case studies on the building of cross-border conduits for ground-up ideas and solutions, such as through democratic decision-making processes and collective intelligence, as well as the expansion of experimentation beyond national and jurisdictional borders in order to promote learning and help keep risk levels manageable.

<sup>3</sup> For previous results of this partnership, see the reports on surfacing global trends in public sector innovation <https://trends.oecd-opsi.org> (2020), <https://trends2019.oecd-opsi.org> (2019), <http://oe.cd/innovation2018> (2018) and <https://oe.cd/eig> (2017).





This third and final report focuses on governments collaborating and leveraging innovative approaches to collectively deliver and enable impactful cross-border solutions. Hands-on delivery and implementation represent the culmination of the different types of initiatives, structures and mechanisms uncovered in the work conducted by OPSI and the MBRCGI. Likewise, governments are putting in place foundations and cross-border enablers to allow for collective design and implementation of innovative policies and services, which can also support the topics covered in the

other reports in this series. Through many of these efforts, international organisations (IOs), such as the OECD and the United Nations, have served both as initiators of cross-border innovation, as well as facilitators and conveners helping governments to deliver and enable innovative cross-border solutions. This further underscores the importance of IOs in working with governments to adapt to new challenges, and shows that existing structures can be a source of innovation, whereas the creation of new structures may contribute to fragmentation if not undertaken with care.<sup>4</sup>

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<sup>4</sup> See a Compendium of International Organisations' Practices (OECD, 2021i) for more information on how IOs play a critical role in helping countries find solutions to common problems.

# Delivering joint cross-border policy and solution-oriented services

Collective policy implementation and innovative service delivery that actively deal with cross-border issues by scaling up new solutions to address them.

## Case Study: Korea Program on International Agriculture(KOPIA)

(South Korea)

A development co-operation platform that facilitates agricultural partnerships and enables the latest agri-tech solutions to be efficiently scaled up and effectively commercialised where they are most needed.





# Digital architecture enabling cross-border innovation

Putting in place data cross-border data-sharing mechanisms and interoperable frameworks and systems to enable cross-border government innovation.

## Case study: X-Road Trust Federation (Estonia and Finland)

The first cross-border data sharing ecosystem of its kind, facilitating the real-time availability of interoperable data on population and businesses in the face of increasing trans-border economic activity.



# Adding a cross-border dimension to upskilling and capacity building

Establishing transnational skills transfer initiatives and building on existing capacity frameworks to address the skills gap specifically for cross-border efforts.

## Case study: Government Experience Exchange Programme (GEEP)

(United Arab Emirates)

A cross-border development and modernisation programme that the UAE offers to governments around the world to share knowledge, skills and experience with a view to building innovation capacities at regional and global levels.



These case studies, alongside workshops and research and analysis of Call for Innovations submissions, have surfaced key challenges and success factors for cross-border government innovation.<sup>5</sup>

## Key Challenges

Either a lack of standards, or fragmentation through too many competing standards

Restrictive data nationalism/regionalism

Misconceptions around data protection rules

Lack of a clear and accepted data sharing ethical framework

## Key success factors

Cross-border skills and capacities

Reliable and standardised data

Interoperable digital infrastructure

Agility and adaptability

We commend the efforts identified in this report and believe they may represent early signals towards a shift to a new stage in the evolution of public sector innovation, where governments devise approaches to working across borders much as they have discussed doing for bureaucratic siloes. Based on this research, four key recommendations have been identified for governments:

<sup>5</sup> As discussed in the “Unpacking findings and lessons” chapter of this report, many key challenges and success factors for initiatives relevant to the discussed topics are related to those identified in the first two reports in this series. In terms of key findings, success factors and subsequent recommendations, this report focuses on those specifically relevant for delivering impactful cross-border solutions rather than dedicating discussion to topics already covered in the previous reports.

# Key recommendations



## 1. Collectively map out interoperability differences with partners and make plans for how they can be overcome.

Early in the exploration and design of cross-border efforts, partners should work together to actively map out areas of potential interoperability mismatch (e.g. legal, regulatory, data, digital maturity, regulation, etc.) and build out a plan for greater alignment.



## 2. Pursue a national public sector data strategy to serve as a foundation for progress and maturity in cross-border digital efforts.

The strategy should encompass different aspects of data and would contribute to building a coherent approach to data at the national level. It should specifically consider and address provisions related to cross-border data flows, cross-border service delivery (when appropriate), interoperability (both technical and non-technical) and relevant enablers.



## 3. Integrate capabilities important for cross-border collaboration and innovation into competency frameworks, training and talent management programmes.

Identifying the right knowledge, skills and mind-sets, such as those discussed in this report, is a key first step to developing a civil service (not just a foreign service) capable of playing a role on the global stage.



## 4. Leverage the positioning of international organisations and build new structures only when existing ones are insufficient and cannot be adapted.

IOs, such as the OECD and the United Nations, are uniquely positioned to help bring about cross-border government innovation through their global networks and supranational visibility of transnational policy challenges and opportunities.



# Delivering joint cross-border policy and solution-oriented services

## THEME 1

Policy implementation and service delivery are often bound to national or jurisdictional borders; however, many countries, regions and cities are acknowledging the importance of dealing with cross-border issues in collective ways. The findings and examples discussed in the first two reports in this series<sup>6</sup> highlight the growing engagement of governments, partners and stakeholders in developing innovative approaches for cross-border governance and experimentation. While a good number of these efforts have already achieved tangible outputs and results, in many cases implementation remains limited with approaches not yet mainstreamed. This final report considers cases of collective policy implementation and innovative service delivery that are actively dealing with cross-border issues by scaling up new

solutions to address them. In terms of the lifecycle of cross-border government innovation, these efforts often pick up where the second report left off: taking small-scale tests and experiments and scaling them into more fully implemented policies and services that have the potential for systemic impact.

Effectively implementing solutions to address cross-border issues remains a complex matter and often requires tailored approaches and novel legal instruments or procedures. OPSI's and the MBRCGI's research has identified a variety of innovative cases where such approaches are being adopted and where policies and services are generating impacts on a growing scale. Identified efforts tend to be clustered

<sup>6</sup><https://cross-border.oecd-opsi.org>.

around specific global challenges and can be divided into three key action areas: environmental sustainability, co-operation in health services and protecting vulnerable groups. The research has also identified attempts to create more structured strategies and frameworks for innovative cross-border action, which are outlined in the final section of the chapter.

In exploring these initiatives it is important to note that public authorities already have a variety of ways of collaborating across border, with differing levels of legal and institutional formality and different levels of integration. As noted in the OECD's Practical Guidance of the Recommendation on Agile Regulatory Governance,<sup>7</sup> governments are encouraged to identify new forms of co-operation only when existing forum can serve the purpose. Otherwise, the collaborative initiative runs the risk of duplication and reduced effectiveness. Governments should first evaluate whether current structures can be used or adapted as a vehicle for cross-border innovation efforts before taking a decision to create a new structure.

## Action areas for innovative cross-border policy implementation and service delivery

Research and the Call for Innovations conducted by OPSI and the MBRCGI indicate that innovative approaches to cross-border policy implementation and service delivery tend to align with several key service areas of critical importance, as discussed below.

## Environmental sustainability

The urgency of the global climate crisis and the depletion of natural resources points to the need for new ways to collaborate and implement policies across national and jurisdictional borders (OECD, 2021a). Delivering innovative programmes and services to both mitigate and adapt to a changing climate is essential to limit the socio-economic risks caused by the instability of deteriorating natural environments and extreme weather events (Climate-KIC, 2021). The innovative cases identified by OPSI and the MBRCGI on this theme demonstrate how multiple public sector actors at the international, regional and municipal level are working together to deploy solutions that can help safeguard from such risks and effectively contribute to a more sustainable future.

Internationally, the CivTech Alliance COP26 Global Scale-up Programme emerges as a key example of cross-border innovation that illustrates how initiatives discussed in the previous report on cross-border experimentation can be scaled up into more fully implemented, mature solutions (see Box 1 for details).

<sup>7</sup> [https://one.oecd.org/document/C\(2021\)99/ADD1/en/pdf](https://one.oecd.org/document/C(2021)99/ADD1/en/pdf).



## Box 1: The CivTech Alliance COP26 Global Scale-Up Programme

The CivTech Alliance is a project aimed at delivering impactful solutions in the fight against climate change. In the context of the 26th United Nations Framework Convention on Climate Change (UNFCCC) Conference of the Parties (COP26), the Alliance brought together policy makers and innovation teams from across ten different countries (Australia, Brazil, Denmark, Estonia, Germany, Lithuania, Poland, Scotland, Spain and the United States) to develop a high-impact scaling programme for 18 climate tech companies around the world. The programme enabled the companies to access policy makers and procurers as well as investors from regional ecosystems to improve their innovations and increase their global impact.

The companies were selected from around the world via a call to address three key global challenges: (1) environmental resilience, (2) reducing food waste and (3) decarbonising transport. Many of the innovative companies participating in the Alliance are now providing implemented and effective solutions to address the three challenges globally.

Here are three examples:

- **Too Good To Go** is a company fighting food waste by providing a geo-localisation-based marketplace for consumers to purchase surplus food from local restaurants and supermarkets. The company has contributed to saving over 98.4 million meals across Europe and North America.
- **XDI System** is a platform that aggregates asset-level data sets with climate models to provide organisations with deep analysis of their exposure to climate change and extreme weather risk. It has assessed 85 million infrastructure assets for 8 weather hazards in 105 countries.
- **Mash Makes** is an energy company that produces hydrogen from agricultural waste and crop residues (biomass) while also sequestering carbon, fighting climate change and desertification.

In the lead-up to COP26, the companies participated in 69 engagement sessions, resulting in more than 200 introductions to leading sustainability researchers and ministers of environment and international trade from around the world, which helped them align their strategies with the needs of policy makers. During the Conference, the companies held events to promote their innovation on a global level and further scale their impact. Since COP26, companies have reported accelerated investment and contracts won as a result of participation, and more governments have expressed an interest in participating in the next iteration.



Going forward, the Global Scale-Up Programme will continue to focus on addressing climate change challenges while also broadening efforts to include GovTech more broadly. In discussing efforts with OPSI, programme officials explained how “triple helix” connections and collaboration across government, industry and academia (e.g. DTU, Technical University of Denmark) have been critical to the success of the initiative by allowing programme leaders to obtain views from a broad spectrum of ecosystem actors. They also emphasised the importance of generating a common language and vocabulary across these actors, and reinforcing the need for each to understand their role and respective responsibilities in regard to tech.

This example also helps to illustrate how innovative efforts can be developed in co-ordination and integrated ways by both new and traditional (e.g. UNFCCC) actors to prevent further fragmentation of approaches, which lower the effectiveness of individual actions.

Source: <https://cop26.civtechalliance.org>, <https://toogoodtogo.org>, <https://xdi.systems>, [www.mashmakes.com](http://www.mashmakes.com), CivTech Alliance officials (interview 9 February 2022).

Sustainable agriculture is another key area of collaboration where innovative cross-border solutions are being implemented. For example, the United Nations Economic Commission for Europe (UNECE) has developed an open source blockchain system to promote responsible consumer choices and business conduct in the cotton market worldwide.<sup>8</sup> Global co-operation in the agricultural sector is also at the heart of the KOPIA project (Korea Program on International Agriculture),<sup>9</sup> a development co-operation platform that facilitates agricultural partnerships and enables the latest agricultural technologies to be efficiently scaled up and effectively commercialised where they are needed most (see case study at the end of the chapter).

Innovative cross-border collaboration for climate action and natural ecosystem protection is also emerging at the regional level. A key example is provided by the OFIDIA2 programme in Apulia (Italy) and Epirus (Greece).<sup>10</sup> Co-funded by the Interreg V-A Greece-Italy Programme, the European Regional Development Fund (ERDF) and by National Funds of Greece and Italy, the project aims at preventing and fighting wildfires across the two regions by improving monitoring, speeding up emergency interventions and promoting citizen education. Beyond stimulating co-operation between researchers and policy makers, OFIDIA2 promotes the use of the latest technology including wireless sensors, a dedicated monitoring interface, weather analysis stations, a data analysis platform and drones.

**Figure 2: The OFIDIA 2 Operating Room in Apulia, Italy**



Source: <https://www.interregofidia.eu/tools-and-services/infrastructure/wildfire-control-room>.

<sup>8</sup> See <https://oecd-opsi.org/innovations/blockchain-in-cotton-value-chains> and <https://unece.org/trade/traceability-sustainable-garment-and-footwear>. The system and blockchain-specific considerations for government are touched on further in the chapter “Digital architecture enabling cross-border design and delivery.”

<sup>9</sup> See <https://oecd-opsi.org/innovations/kopia-agriculture> and <http://itcc.rda.go.kr/kopia/main/mainpage/goMainPage.do>.

<sup>10</sup> [www.interregofidia.eu/about](http://www.interregofidia.eu/about)

Ecosystem protection is also at the heart of the initiative.<sup>11</sup> The project was led by the Commission on Environmental Auditing of Latin America (COMTEMA) and brought together 26 inspection entities from 17 countries to develop a systemic regional overview of the management and implementation of 2 415 protected areas in the region. The assessments were based on internationally recognised methodologies for evaluating the effectiveness of protected area management and resulted in a cross-border geo-referenced tool – Indimapa – that allows for effective monitoring, communication and comparability of the different conservation units in the region.

Relevant efforts have also been emerging at the local level, where mayors and municipalities are collaborating to deliver innovative solutions for their residents. Notably, the C40 Global Covenant of Mayors for Climate and Energy (GCoM) is the leading international initiative providing a platform for city-level collaboration and assisting local governments in mobilising and supporting climate action in their communities.<sup>12</sup> Among the many cross-jurisdiction collaborations born from the initiative, the Climate Action Kansas City (CAKC) is a bipartisan coalition of elected officials from different levels of government, private partners, non-profit organisations and sustainability experts that are collaborating to deliver effective climate action in the Kansas City region.<sup>13 14</sup> CAKC's leaders have implemented policy changes in multiple

municipalities, adopting climate protection policies, updating building codes, codifying solar readiness ordinances and supporting municipal transitions to 100% clean energy through the Renewables Direct programme (Climate Action KC, 2019).

## Co-operation in health services

Several cases of innovative cross-border health services and policies emerged from OPSI's and the MBRCGI's research and Call for Innovation, underscoring the growing importance of action-oriented collaboration in the field.

With borders closed and value chains disrupted in the wake of the COVID-19 pandemic, cross-sectorial and cross-border collaboration in the development and production of vaccines was crucial to ensure the availability of effective vaccines in record times (Druehl, Minssen and Price, 2021). Collaboration beyond borders was also critical to guarantee continuity in health services – with several cases of cross-country patient transfers from countries lacking sufficient ICU beds.<sup>15</sup> The Cerdanya hospital in the Pyrenees mountain range at the border between France and Spain adopted an even more innovative approach to the crisis by setting up a “green lane” for hospital workers and patients to cross the border at all times, thereby

<sup>11</sup> See <https://oecd-opsi.org/innovations/coordinated-environmental-policy-auditing> and <https://portal.tcu.gov.br/biblioteca-digital/auditoria-coordenada-nas-areas-protegidas-da-america-latina.htm>.

<sup>12</sup> [www.c40knowledgehub.org/s/article/Global-Covenant-of-Mayors-for-Climate-and-Energy-GCoM?language=en\\_US](http://www.c40knowledgehub.org/s/article/Global-Covenant-of-Mayors-for-Climate-and-Energy-GCoM?language=en_US).

<sup>13</sup> <https://climateactionkc.com>.

<sup>14</sup> To read more about the cross-city collaborations emerging from the GCoM initiative, see: [www.c40knowledgehub.org/s/article/Better-together-How-cities-can-collaborate-for-faster-more-effective-climate-action](http://www.c40knowledgehub.org/s/article/Better-together-How-cities-can-collaborate-for-faster-more-effective-climate-action).

<sup>15</sup> <https://cor.europa.eu/en/engage/Pages/covid19-stories.aspx#cooperation>.



creating the first truly cross-border hospital in Europe.<sup>16</sup> Innovative cross-border work to slow the spread of the pandemic was also demonstrated by the University of California, San Diego (UCSD)'s Center on Global Justice at the San Diego-Tijuana border between the United States and Mexico.<sup>17</sup> Students and researchers from the UCSD School of Medicine provided border communities with public health education content via ten remotely controlled computer stations linked to a large display screen, which disseminated information and helped slow the spread of the pandemic (Johnson, 2020).

Beyond the COVID-19 pandemic, several public health actors and stakeholders have focused on unlocking the broader potential of global cross-border collaboration to jointly deliver health services to citizens. A key example is provided by the Health Innovation Exchange (HIEx)<sup>18</sup>. Launched by UNAIDS, this platform aims to facilitate cross-border collaboration and cross-sector connections to finance innovative health solutions and enable the achievement of the SDGs, especially in the Global South. Through its Country Accelerators, HIEx enables innovators to access global financing, share knowledge, fast-track their ideas and speed up their impact. In India, a collaboration between the government's Biotechnology Industry Research Assistance Council (BIRAC) and the non-profit platform SocialAlpha, has led to the creation of the India Accelerator Platform, which facilitates market entry for innovative health solutions and promotes their adoption worldwide.<sup>19</sup>

Another case of innovative cross-border collaboration in public health is the European Commission Bio-Crime prevention project, which links the Friuli-Venezia Giulia and Carinthia regions in Italy and Austria. This collaboration provides a framework for joint action (e.g. training, data sharing) between the two regions with a view to halting the spread of diseases that can be transmitted to human from animals, and reducing illegal animal trade (European Commission, 2019).

## Protecting the vulnerable

The final primary action area identified through the Call for Innovations and research focuses on cross-border efforts aimed at protecting vulnerable groups and promoting inclusive social and economic development. The Sustainable Development Goals (SDGs) provide a key framework in this regard, guiding policy makers in promoting global partnerships for sustainable development (Goal 17).<sup>20</sup> The global, cross-sectorial and interconnected nature of the SDGs makes innovative cross-border collaboration crucial to understanding the transboundary impacts of national policies and advancing effectively the fulfilment of the Goals (OECD/EC-JRC, 2021).

A key case in this action area is the multi-agency project led by the United Nations Conference on Trade and Development (UNCTAD) in the border areas of

<sup>16</sup> Many of the legal and administrative hurdles preventing doctors from operating across the border were overcome thanks to the hospital's participation in the "b-solutions" project. For more details, see [www.b-solutionsproject.com](http://www.b-solutionsproject.com) and the discussion on b-solutions in the "Adding a cross-border dimension on upskilling and capacity building" chapter of this report.

<sup>17</sup> The Center's innovative work was also featured in the second report in this series. For more information on this initiative, see: <https://ucsdnews.ucsd.edu/pressrelease/a-cross-border-approach-to-tackling-covid-19>.

<sup>18</sup> <https://hiex.ch>.

<sup>19</sup> <https://hiex.ch/hiex-accelerators.html>.

<sup>20</sup> [www.un.org/sustainabledevelopment/globalpartnerships](http://www.un.org/sustainabledevelopment/globalpartnerships).

Malawi, Tanzania and Development (UNCTAD) in the border areas of Malawi, Tanzania and Zambia.<sup>21</sup> UNCTAD collaborated with six other UN agencies to provide small-scale cross-border traders with the information and entrepreneurial skills required to survive and recover from the COVID-19 crisis.<sup>22</sup> In the African cross-border region, the project focused particularly on women traders, involving them in workshops and training on trade rules, traders' rights and obligations, and entrepreneurial

skills development, ultimately helping them to switch from informal to formal cross-border trade (UNCTAD, 2021a). In so doing, the project has contributed to the economic and social resilience of small-scale traders in the region, helping them to overcome the crisis, limiting their reliance on illegal trade routes and enabling their businesses to survive.

**Figure 3: A UNCTAD project participant in her shop in Koronga, Malawi**



Source: <https://unctad.org/news/helping-cross-border-women-traders-navigate-covid-19-crisis>.

<sup>21</sup> The project formed part of UNCTAD's "Global Initiative towards post-Covid-19 resurgence of the MSME sector" initiative. For more information, see: <https://msme-resurgence.unctad.org> and <https://unctad.org/project/global-initiative-towards-post-covid-19-resurgence-msme-sector>.

<sup>22</sup> The UN agencies involved were: the Department of Economic and Social Affairs (UNDESA), the Economic and Social Commission for West Asia (UNESCWA), the Economic and Social Commission for Asia and the Pacific (UNESCAP), the Economic Commission for Latin America and the Caribbean (UNECLAC), the Economic Commission for Europe (UNECE) and the Economic Commission for Africa (UNECA).

Responding to the COVID-19 pandemic and its adverse effects on vulnerable groups was also the focus of an international collaboration established between Argentina, Chile and Internet company Meta (formerly Facebook).<sup>23</sup> The Silent Channel project was prompted by increased rates of domestic violence during lockdown periods in the two countries, and aimed to create a secret communication channel for women living with their aggressor, providing them with support and information. The initiative provided a silent hotline accessible via WhatsApp that combined direct care (for cases of guidance, emotional support and imminent emergency situations) with an automated care bot (for general information). During the first year following rollout of the channel in Chile, more than 27000 conversations were held, corresponding to about 25% of the total services provided by the National Service for Women and Gender Equality, whose channels experienced a decrease in congestion due to the innovative project. Originally a temporary solution, the service channel has become a permanent fixture due to its success in combating domestic violence.

Two important cases of cross-border collaboration which emerged from the Call for Innovations and the research involve the use of innovative technologies to help protect vulnerable children:

- **Project Arachnid** is a collaboration led by the Government of Canada and involving six other countries aimed at fighting the proliferation of child sexual abuse material on the Internet.

<sup>24</sup> As of 1 December 2021, its innovative image

detection system has processed over 132 billion online images and sent over 10 million notices to web providers to take images down from their websites.

- **Identifying School Infrastructure Vulnerability at Scale** is a transnational collaboration between the California Polytechnic State University, San Luis Obispo, Munich University of Applied Sciences and the World Bank's Global Program for Safer Schools.<sup>25</sup> With support from Amazon Web Services (AWS), the partners employed artificial intelligence (AI) algorithms and photographic images from school buildings in Nepal and Kyrgyzstan to determine the structural type of school buildings and to assess their vulnerability to natural disasters in a cheap, fast and scalable way. A mobile application enables school administrators and community members to upload pictures of their schools, which are then processed by an algorithm and remotely reviewed by trained engineers. The collected data are aggregated and provided to decision makers to identify risk areas and prioritise mitigation investments.

<sup>23</sup> To learn more about the innovation, read the submission on the OPSI case study platform at:

<https://oecd-opsi.org/innovations/silent-channel-gender-based-violence-covid-19>.

<sup>24</sup> <https://projectarachnid.ca/en/>.

<sup>25</sup> For more information, see: <https://oecd-opsi.org/innovations/simplifying-the-identification-of-school-infrastructure-vulnerability-at-scale/> and <https://dxhub.calpoly.edu/challenges/identification-of-school-vulnerability-at-scale>.



# Strategies and frameworks for cross-border action

## Smart specialisation and regional development

The majority of systemic efforts in innovative cross-border action have emerged at the regional level, with public policies focused on promoting private sector innovation and regional development. In this context, smart specialisation strategies have been a driving force, with cross-border voluntary associations and committees leading these co-ordination efforts (OECD, 2013a). Examples include the following projects

- **The Smart Specialization Strategy of Galicia and Northern Portugal (RIS3T)**<sup>26</sup> is the first cross-border regional innovation scheme in the European Union (EU) <sup>27</sup>. It comprises a framework to launch co-ordinated actions and projects aimed at attracting European funds and strengthening the region's innovativeness and economic growth.

- **The ROCKET (Regional Collaboration on Key Enabling Technologies)** project <sup>28</sup> at the German-Dutch border provides a regional framework for promoting innovative small and medium enterprises (SMEs). Via a permanent consortium of cross-border partners, ROCKET facilitates applications and processes for SMEs to receive grants for innovative projects (up to EUR 300000) and access an extensive cross-border knowledge network to improve their solutions with a view to addressing real policy issues.

- **The Vanguard Initiative (VI)**<sup>29</sup> is a unique alliance of regional authorities and policy makers from 39 organisations and 11 EU Member States that have come together to collaborate on regional policy. VI members advocate for effective synergies between EU funding tools and instruments with regional and national funding. Notably, their work has resulted in the development of the "Interregional Innovation Investments" (I3)<sup>30</sup> policy – a funding instrument for interregional public-private innovation partnerships.

These efforts follow a familiar pattern in public sector innovation, where governments and their partners innovate in order to unlock economic development primarily through supporting industry.

<sup>26</sup> <https://www.interregeurope.eu/good-practices/cross-border-smart-specialisation-strategy-of-galicia-northern-portugal-ris3t>.

<sup>27</sup> To learn more about regional innovation schemes, see: <https://eit.europa.eu/our-activities/eit-regional-innovation-scheme>.

<sup>28</sup> <http://rocket-innovations.eu/>.

<sup>29</sup> [www.s3vanguardinitiative.eu/about/our-story](http://www.s3vanguardinitiative.eu/about/our-story).

<sup>30</sup> [https://ec.europa.eu/regional\\_policy/en/policy/themes/research-innovation/i3](https://ec.europa.eu/regional_policy/en/policy/themes/research-innovation/i3).

## Toward a systemic approach to cross-border action in the public sector

More recently, some public sector actors have been developing frameworks for cross-border implementation that seek to address the unique challenges that arise when delivering policies and services collectively and operating across borders. Indeed, beyond an overall lack of stakeholder co-ordination, underdeveloped institutional environments often mean that practitioners and policy makers operating in cross-border contexts face overcomplicated administrative and legal procedures (European Commission, 2020). These challenges relate to many of the issues touched upon in the first two reports in this series and are also flagged in the European Spatial Planning Observation Network (ESPON)'s practical guide for cross-border public services (ESPON, 2019), including:

- Unequal distribution of benefits across borders
- Lack of comparability of information and data, particularly related to the demand for service provision
- Budget and costs differentials
- Unclear responsibilities or changes in the responsibilities of key stakeholders
- Legal frameworks with different standards or norms.innovation partnerships.

As outlined in the recommendations at the end of the first report in this series, cross-border government innovation can benefit from partners collectively agreeing on shared challenges and developing a joint vision and adaptable strategy to address them. Accordingly, clear definition of roles and areas for policy implementation and service delivery can be a key factor in contributing to the efficiency and sustainability of collaborative action across borders (Medeiros, 2019). According to

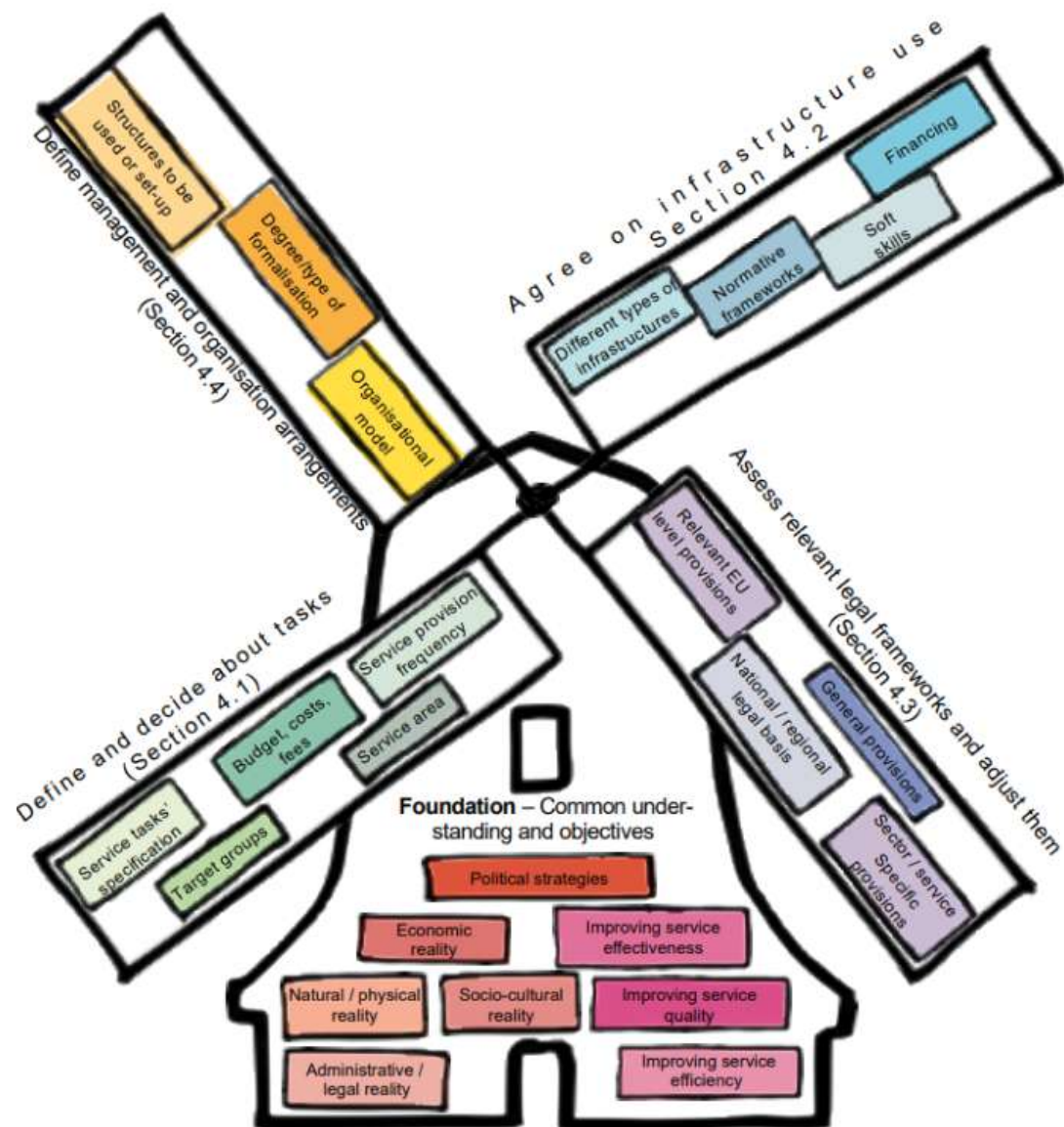
Medeiros (2019), the shared factors influencing and facilitating such delimitation can be:

- Historical
- Demographic
- Cultural
- Institutional and administrative
- Social
- Spatial
- Economic
- Statistic
- Infrastructural
- Environmental

Because of geographic proximity and an overarching legal and regulatory framework (for EU members states), the European context presents a variety of regions where such characteristics are shared by localities across national borders. The European Commission (EC) has strongly emphasised the importance of such regions – defining them as “living labs of European integration”, where the benefits of cross-border collaboration, freedom of movement and policy implementation are particularly felt by citizens (European Commission, 2017).

Further guidance on fulfilling this potential can be found in the EPSON guide mentioned above. The guide outlines principles and provides detailed practical insights that can serve as a practical implementation framework for successfully establishing areas of joint service delivery across national borders. These include a foundational element – a common understanding and established principles among all partners – and four action points (see Figure 4) (ESPON, 2019).

Figure 4: Model for cross-border public services



Source: [www.espon.eu/sites/default/files/attachments/ESPON%20CPS%2002%20Practical%20guide.pdf](http://www.espon.eu/sites/default/files/attachments/ESPON%20CPS%2002%20Practical%20guide.pdf).

While these approaches have the potential to lead to new, effective services and policies across borders, comprehensive frameworks and strategies to promote innovative cross-border action in the public sector are few. As demonstrated by the examples that do exist, most rely on countries that are neighbours in the European space, often with pre-existing threads that already bind them together (e.g. EC directives). Additional work needs to be undertaken to explore the extent to which such strategies and frameworks are applicable to other regions, as well as cross-border efforts in which partners are spread across the globe. OPSI and the MBRCGI will continue to explore this space in a forthcoming Cross-Border Government Innovation Playbook.



## Korea Program on International Agriculture (KOPIA)

(South Korea)

KOPIA is an innovative development co-operation platform and global partnership through which the Korean government supports the agricultural development of countries that bilaterally engage with the programme (hereafter known as partner countries).<sup>31</sup> Led by Korea's Rural Development Administration (RDA), the programme leverages Korea's experience in and knowledge of developing agricultural technology (agri-tech) solutions, such as new virus-resistant seed varieties. The KOPIA programme consists of three pillars:

1. the development of farming technologies customised to the needs of partner countries,
2. the execution of pilot projects to demonstrate practical effectiveness and
3. the involvement of other donors to scale up initiatives. Each of these pillars supports the programme's long-term objective of increasing the productivity and income levels of its end-users, namely local farmers, their families and their communities.

More recently, KOPIA has developed an innovative platform to share valuable lessons and experience from its 22 active projects and to collect funding from international donors. This platform strives to improve crop productivity based on the spread of science and technology for food security, with efforts underway by the RDA to make KOPIA part of agricultural policy in partner countries, with a view to improving food security and enhancing quality of life.

<sup>31</sup> <https://oecd-opsi.org/innovations/kopia-agriculture>.

## Context

The Korean War stalled the national economic boom that followed the Second World War and severely damaged the country's agricultural sector, leading to widespread famine and poverty. In response, the Korean government reformed the country's agricultural processes, protected its infant agricultural industries from foreign trade and adopted modern farming technologies, including water management, land improvement and fertiliser usage. Agricultural productivity grew rapidly, leading to significant improvements in crop yields.<sup>32</sup> As a result, South Korea experienced a successful agricultural development path throughout the second half of the 20th century. The success of this agricultural development path has prompted the Korea government to share its valuable experience with emerging economies through the KOPIA partnership programme.

However, the country has faced barriers in developing cross-border partnerships to share its agri-tech experiences, due to three main factors. First, efforts to fund and engage in agricultural development projects abroad have not enjoyed widespread support from Korean citizens, who question the government's moral and financial commitment to other countries while Korea still faces domestic challenges. Second, Korea's own researchers and experts lacked sufficient information about the environments and dynamics that govern foreign countries: project managers knew little of foreign agricultural institutions and researchers had a limited understanding of foreign ecological environments. Third, Korea's political and economic links and relationships with other countries – and with foreign agricultural ministries in particular – were tenuous, limiting the programme's access to important data and information. Limited understanding of foreign

ecological environments. Third, Korea's political and economic links and relationships with other countries – and with foreign agricultural ministries in particular – were tenuous, limiting the programme's access to important data and information.

## An innovative solution

To overcome contextual barriers, the Government of South Korea sought to create a cross-border collaboration of collective action and mutual benefit, which would become KOPIA. KOPIA is an innovative development co-operation platform that facilitates agricultural partnerships between the Korean government and partner countries, such as Kenya, Senegal or Bolivia, where agricultural technologies are efficiently scaled up and effectively commercialised. The long-term objective of the programme is to enhance the productivity and income levels of its end-users, namely local farmers, families and communities in countries where the programme is active. To achieve this, KOPIA's short-run objectives are threefold:

1. to develop customised farming technologies;
2. to carry out pilot projects in partner countries to demonstrate practical effectiveness; and
3. to involve other donors, such as the World Bank or the Asian Development Bank, to scale up the initiatives.

Throughout each stage – planning, piloting and scaling – impact is of the utmost importance: the programme consistently consults its end-users, and building effective, customised solutions drives the projects forward.

<sup>32</sup> [www.oecd.org/korea/40417830.pdf](http://www.oecd.org/korea/40417830.pdf).

**Figure 5: Onion cultivation training in Sri Lanka**

Source: <https://oecd-opsi.org/innovations/kopia-agriculture>.

Evidence of collective action to overcome the issues presented above is seen in the collaborative actions of partners seeking mutual benefit. Farmers, community leaders, agencies and scientists of partner countries offer an expansive knowledge of local ecological and institutional environments, while Korean programme managers and experts draw on their country's experience in agricultural productivity growth and the ability to develop effective agri-tech solutions. The end results yield more effective approaches for partner countries, while the programme also provides special benefits to Korea. First, high-level leaders of partner countries are expressing their gratitude by addressing chronic problems that hinder agricultural innovation in partner countries through KOPIA. These results are helpful for public diplomacy between Korea and its partners at the summit. Second, the Korean government uses KOPIA not only to build cross-border co-operation in the field of crop production, but also to provide support for organising land and building infrastructure such as facilities for crop production.

Through these efforts, the KOPIA project creates mutually beneficial and economically co-operative relationships with its relevant partners.

KOPIA projects are broken down into a series of phases. Throughout the planning phase, the partner country and its relevant high-level agencies define the priorities and set the agenda for the project. The relationship between two committees – the Official Development Assistance (ODA) Committee and the KOPIA Strategy Committee – is critical in the early stages, both of which are organised and facilitated by Korea's Rural Development Administration. The ODA Committee consists of high-level stakeholders from the partner country, including agricultural and research and innovation (R&I) agencies, as well as Korean national representatives to the partner country, such as the Korean Embassy. The committee is tasked with identifying a key problem that is stunting agricultural



productivity and which is aligned to the individual partner government's existing agricultural policies. For example, in Cambodia the Ministry of Agriculture, Forest and Fisheries (MAFF) and the Cambodian Agriculture Research and Development Institute were represented on their ODA Committee and played key roles in defining the problem they wanted to tackle.

Once developed, the ODA Committee sends the proposal to the KOPIA Strategy Committee, consisting of members of Korea's RDA, which

makes an evaluation using three criteria:

1. Does it align with SDG 1 ("No poverty") and SDG 2 ("Zero hunger")?
2. Does it align with the partner country's agricultural policies and goals?
3. Does it align with the OECD DAC principles – a framework intended to guide the evaluation of development assistance?<sup>33</sup> (See Box 2: OECD DAC).

## Box 2: OECD Development Assistance Committee (DAC) Principles

Developed in 1991, the DAC principles offer a shared and standardised framework to measure and evaluate development programmes. The framework addresses key areas of aid programming and management including project appraisal, programme assistance and technical co-operation. The six principles include relevance, coherence, effectiveness, efficiency, impact and sustainability. The goal of the criteria was revised in 2018: it currently intends to support better evaluation that in turn leads to better policies to advance the 2030 Agenda for Sustainable Development.



Source: [www.betterevaluation.org/sites/default/files/revised-evaluation-criteria-dec-2019\\_0.pdf](http://www.betterevaluation.org/sites/default/files/revised-evaluation-criteria-dec-2019_0.pdf).

<sup>33</sup> [www.oecd.org/development/evaluation/2755284.pdf](http://www.oecd.org/development/evaluation/2755284.pdf).

Once the proposal is approved by the KOPIA Strategy Committee, the committees work together to create a clear project package and develop a set of objectives and performance targets. The initial planning phase therefore represents a partner-led agenda-setting process, during which the agricultural problems are defined locally, and targets are then set collaboratively. Throughout the implementation phase of a KOPIA project, the joint development and delivery of an effective and enduring agri-tech solution takes centre stage. The implementation phase follows three key stages, the purpose of which are to develop an agri-tech solution that helps strengthen local productivity and incomes. These solutions can take many forms, but often focus on the creation of new seed varieties.

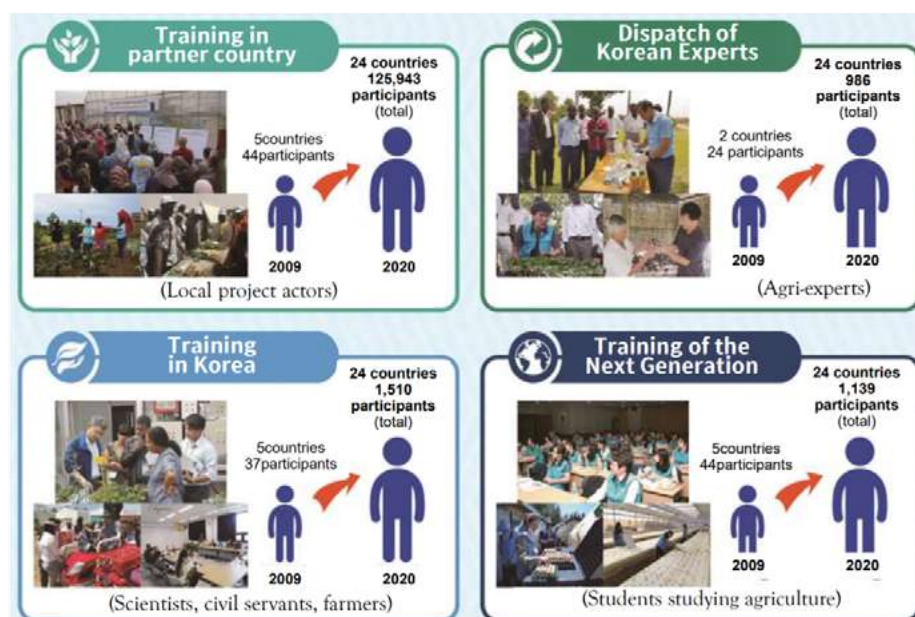
often focus on the creation of new seed varieties. For example, in Bolivia, KOPIA developed a virus-free potato propagation system, while in Kenya the programme improved poultry farming by cultivating virus-resistant corn varieties. To ensure

the proper application and longevity of each agri-tech solution, KOPIA emphasises education and knowledge sharing. Training programmes come in three forms:

1. Local scientists and researchers are invited to Korea to learn about the development of different agri-tech solutions.
2. Korean experts are sent to the partner countries to support local farmers in using the agri-tech solutions.
3. The Korean experts are tasked with educating local students studying agriculture, thereby strengthening the next generation of farmers and agricultural policy makers (see Figure 6).

This cross-border exchange of scientists, researchers and experts is a cornerstone of each project's joint delivery. Furthermore, the considerable time spent working with end-users, such as farmers and local communities, increases the likelihood that these solutions will stand the test of time.

**Figure 6: Changes in education from 2009 to 2020**

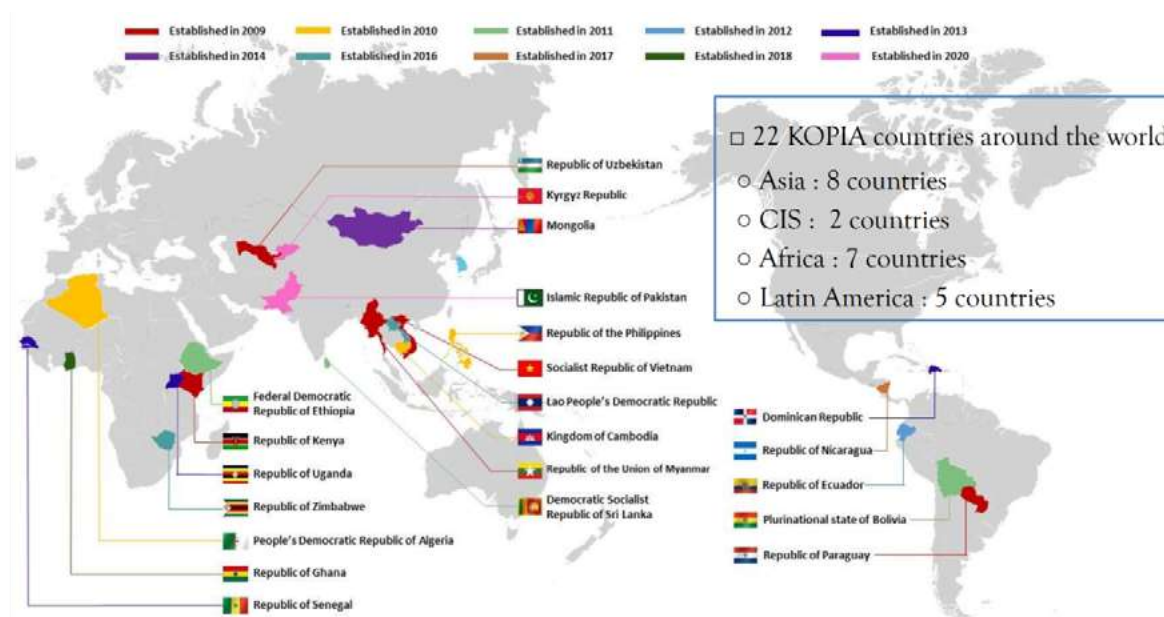


Source: <https://oecd-opsi.org/innovations/kopia-agriculture>.

Several conditions allow KOPIA projects to be scaled quickly and reach full joint delivery effectively. First, close ties with local farmers and communities increase the likelihood that agri-tech solutions will be willingly adopted and diffused throughout focal and neighbouring communities. Second, many regions around the world face similar problems that stunt agricultural productivity and operate within similar environmental conditions. This allows for agri-tech solutions, such as a specific seed or crop variety, to be diffused to other regions within or beyond a country's borders. KOPIA's replication of its Kenya-based virus-resistant corn variety to poultry farms in Senegal

offers a good example. Third, KOPIA focuses on establishing high-quality seed production systems within partner countries, whose national research institutes develop the capabilities to create, certify and disseminate their own agri-tech solutions. This system has already led to positive results in Southeast Asia, where Viet Nam, Sri Lanka, the Philippines and Myanmar have cultivated stronger and more productive agricultural systems after their involvement in the programme came to an end. KOPIA initially launched its journey with six partners in 2009 and has since expanded to 22 countries covering four continents (Figure 7), with two to three projects in each.

Figure 7: KOPIA countries



Source: <https://oecd-opsi.org/innovations/kopia-agriculture>.



KOPIA has continuously optimised its project implementation systems through numerous projects and five-year evaluations, as follows:

- **Phase 1 (2009-2013).** Seasoned experts were deployed to partner countries to work directly with local stakeholders. KOPIA experts gained greater understanding of local contexts, showing innovative leadership in diagnosing problems and recommending solutions.
- **Phase 2 (2014-2018).** Some of the programme's success stories were scaled by KOPIA through replication in other countries and regions, targeting similar problems. Here, the assessment systems for new technologies were established, laying the foundations for wider dissemination of results (see the Impact and Potential section).
- **Phase 3 (2019-2023).** KOPIA invites international donors, such as the World Bank or the Asian Development Bank, to spread achievements so that new technologies can play a role in addressing the underlying agricultural and rural challenges of partners. In this phase, an innovative platform for other donors was established, allowing KOPIA to share extensive experience and know-how from 22 countries.

long-term impact is also exemplified by the relationships between KOPIA representatives and a range of different beneficiaries, including local

policy makers, scientists and researchers, farmers and their communities. As explored in the section above, policy makers are involved in determining the choice of agricultural problems to address, scientists and researchers work with Korean experts to build the agri-tech solutions, and farmers play an integral role in disseminating the solutions in rural areas. This collaboration allows the agri-tech solutions to be scaled and replicated as smoothly as possible.

## Impact and potential

Through 2017, KOPIA's production-inducing effect amounted to US\$ 99 million, nearly 1.7 times its total budget spent during the same period (US\$ 58.9 million). Considering its low cost, the programme has been highly effective. The KOPIA team collected country-specific and project-specific data from reports, field visits and interviews with stakeholders to analyse the programme's inputs, outputs and outcomes. The Sesame model village in Paraguay is a particularly noteworthy case: a study found that the project added US\$ 760 in additional annual income to each participating farm household, with a cost-benefit ratio of 1.52, indicating positive value for money.

The efficacy of the programme can also be illustrated by a project carried out in Cambodia, where the KOPIA Cambodia Centre launched projects to enhance corn and potato yields and poultry production (see Box 3).

## Box 3: Fact sheet of KOPIA project in Cambodia

### Partners

- Cambodian Ministry of Agriculture, Forest and Fisheries (MAFF).
- Cambodian Agriculture Research and Development Institute (CARDI).
- KOPIA Cambodia Centre (RDA).

### Main goals and activities

- Develop locally adapted corn cultivars for livestock feed.
- Select locally adopted potato varieties and suitable cultivation areas.
- Improve poultry production technologies and implement a model village project with follow-up.
- Develop locally adapted bivoltine silkworm hybrids.

### Main goals and activities

- Develop locally adapted corn cultivars for livestock feed.
- Select locally adopted potato varieties and suitable cultivation areas.
- Improve poultry production technologies and implement a model village project with follow-up.
- Develop locally adapted bivoltine silkworm hybrids.

### Key achievements

#### Corn

- Developed Cambodia's first maize variety and tested local adaptability.
- Accelerated harvesting time by 10-15 days.
- Reduced seed cost from US\$ 6 to US\$ 3 per kg as a substitute for imported varieties.

#### Potato

- Produced first-ever potatoes in Cambodia and selected locally adapted varieties.
- Completed the yield test on highlands of Mondol Kiri region during the dry season, harvesting 23 tonnes per hectare.

#### Poultry

- Improved chicken production with vaccines and nutritionally enhanced feed.
- Reduced the mortality rate from 22% to 6%.
- Shortened the rearing period from 106 days to 67 days.

Source: <https://oecd-opsi.org/innovations/kopia-agriculture>.

## Challenges and lessons learned

Two main challenges were identified in developing this cross-border innovation. First, in the early stages of the programme, KOPIA focused on Korean-native vegetables, rice seeds and cultivation technologies, which quickly ran into adaptation issues due to the different climates and diets of partner countries. To overcome this challenge and respond to the needs of KOPIA's partners, the programme had its experts spend more time in the partner countries. This improved KOPIA's ability to consider local conditions, including agricultural policy, environments and diets when choosing a crop, and to crossbreed with native varieties for climate adaptation. Second, despite being cost effective, KOPIA's growth is currently limited by the amount of funding it receives.

With more funding, the programme could expand into new countries, replicating and scaling existing agri-tech solutions or developing entirely new ones. The RDA's aims are ambitious, namely, to increase the programme's public investment by the Korean government, as well as international partners, such as the World Bank and the Asian Development Bank, to US\$1 billion by 2030.

# Digital architecture enabling cross-border innovation



One of the most common types of effort uncovered by OPSI and the MBRCGI involves the exploration of seamless cross-border digitally enabled services and collaboration mechanisms. Examples include many of the initiatives and their objectives discussed in this series of reports, including the CivTech initiatives discussed in Box 1. This digital focus also surfaced in the research with academic journals, blogs and other sources reflecting a heavy emphasis on digital concepts relative to other types of efforts (e.g. governance bodies, networks, experimentation methods), although many of these approaches rely on digital systems.

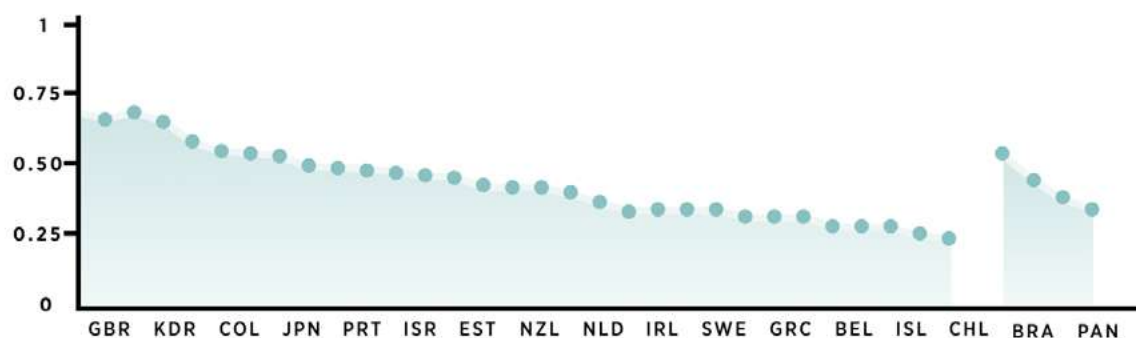
The need for digital innovation has become even more pressing in the context of the COVID-19 pandemic. Co-operation and co-ordination across borders and jurisdictions has been critical for supporting knowledge sharing and standards around issues such as vaccine supply and

administration (OECD, 2021b). However, cross-border elements also complicate the pursuit of innovative digital solutions, pushing governments and their partners to create new arrangements and architectures to allow their digital efforts to scale beyond borders.



The vision of governments across the world collaborating in innovative ways and using digital tools and services to comprehend and address global challenges is underpinned by data. However, OECD work has found that most national governments are not yet making strategic use of data or exploiting its potential as a foundation for digital government, including governance, access, sharing and re-use mechanisms (Figure 8). Such national capacities are critical to enabling the strategic use of data for cross-border government innovation. Similarly, while countries have generally matured their open data policies and efforts in recent years through stronger governance frameworks and high-level political willingness, country performance, as measured by the OECD Open, Useful and Re-usable data index (OURdata Index), still varies significantly (OECD, 2020a).

**Figure 8: Country performance in achieving a data-driven public sector**



Source: OECD (2019a)

In fact, extensive research has found that lack of data and the capacity to meaningfully interpret data that do exist are among the most significant barriers to governments innovating collectively to overcome global challenges (OECD/EC-JRC, 2021; OECD, 2020b; European Commission, 2020b; ESPON, n.d.). Restrictions on cross-border data flows have increased in recent years (Cory and Dascoli, 2021; WEF, 2020; Ferracane, 2017), with policy makers commonly citing privacy regulations, security and industrial policy as factors curbing transnational data exchange, according to OECD work (Casalini and López González, 2019). Such issues are particularly acute in countries such as China, India, Indonesia, the Russian Federation and Viet Nam, which have put in place significant

restrictions that limit cross-border data flows (Chan, 2018; Ferracane, Lee-Makiyama and van der Marel, 2018).

Overcoming such barriers comes with its own set of considerations and challenges. For instance, governments must consider the free flow of all types of data alongside concepts of sovereignty, governance, trade, intellectual property, privacy and security, not to mention the more technical aspects of data exchange (De La Chapelle and Porciuncula, 2021). Governments have grappled with these issues through instruments like the EU General Data Protection Regulation (GDPR), the Association of Southeast Asian Nations (ASEAN) Framework for Personal Data Protection, the

Asia-Pacific Economic Cooperation (APEC) Cross-Border Privacy Rules (CBPR)<sup>34</sup> and various trade agreements,<sup>35</sup> among other implemented items. Proposed rules such as the EU Data Governance Act (for promoting open data, data sharing and data spaces across EU) (European Commission, 2020c) and the Data Act (for facilitating business-to-business and business-to-government data sharing)<sup>36</sup> also seek to ameliorate the situation. But in general, government rules and transnational agreements are fragmented in regard to the free flow of data (De La Chapelle and Porciuncula, 2021; OECD, 2021c; Protopappas, Sideridis and Yialouris, 2020; WEF, 2020; Segal, 2019; Kalvet et

al., 2018; Aaronson, 2018), and by extension, the ways in which such data can be used to support cross-border government innovation. The United Nations has characterised the overall state of digital co-operation at large as “highly complex and diffused but not necessarily effective” (United Nations, 2019), underlying the key roles played by governance and co-operation. The magnitude of these long-discussed challenges and related issues was acutely demonstrated during the COVID-19 pandemic, as ad-hoc and fragmented data governance and data and information sharing systems hindered a co-ordinated response (OECD, 2021c).

These issues constitute an entire field of study that extends far beyond the scope of this report;<sup>37</sup> however, it is clear that cross-border data flows have specific implications for public governance and call for stronger international data governance arrangements and coherent multinational action (OECD, 2019b). OPSI and the MBRCGI have identified actions taken by governments and their partners to evolve the current data landscape and move beyond border-centric considerations of data. However, any effort to advance in facilitating and maximising the value of data flows in ways that are dependent on trust, rather than on geographic borders, necessitates the co-operation and collaboration of governments around the world.

Building consensus around guiding principles that can shape international norms and standards and national rules is therefore essential,<sup>38</sup> as these underpin new and innovative approaches to enabling cross-border data flows as well as the cross-border government services that are dependent on the data.

The United Nations has described the current governance of cross-border data flows as “at an impasse”, and confirms that “an international framework is urgently needed to address this situation” (UNCTAD, 2021b). The OECD has developed a public sector data governance framework to help governments strengthen their

<sup>34</sup> See [www.apec.org/about-us/about-apec/fact-sheets/what-is-the-cross-border-privacy-rules-system](http://www.apec.org/about-us/about-apec/fact-sheets/what-is-the-cross-border-privacy-rules-system).

<sup>35</sup> For example, the Comprehensive and Progressive Agreement for Trans-Pacific Partnerships (CPTPP) and the United States-Mexico-Canada Agreement (USMCA) include provisions encouraging cross-border data flows and banning certain forms of data flow restrictions, such as server location requirements (see [www.cigionline.org/static/documents/documents/paper%20no.197\\_0.pdf](http://www.cigionline.org/static/documents/documents/paper%20no.197_0.pdf)).

<sup>36</sup> [https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13045-Data-Act-&-amended-rules-on-the-legal-protection-of-databases\\_en](https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13045-Data-Act-&-amended-rules-on-the-legal-protection-of-databases_en).

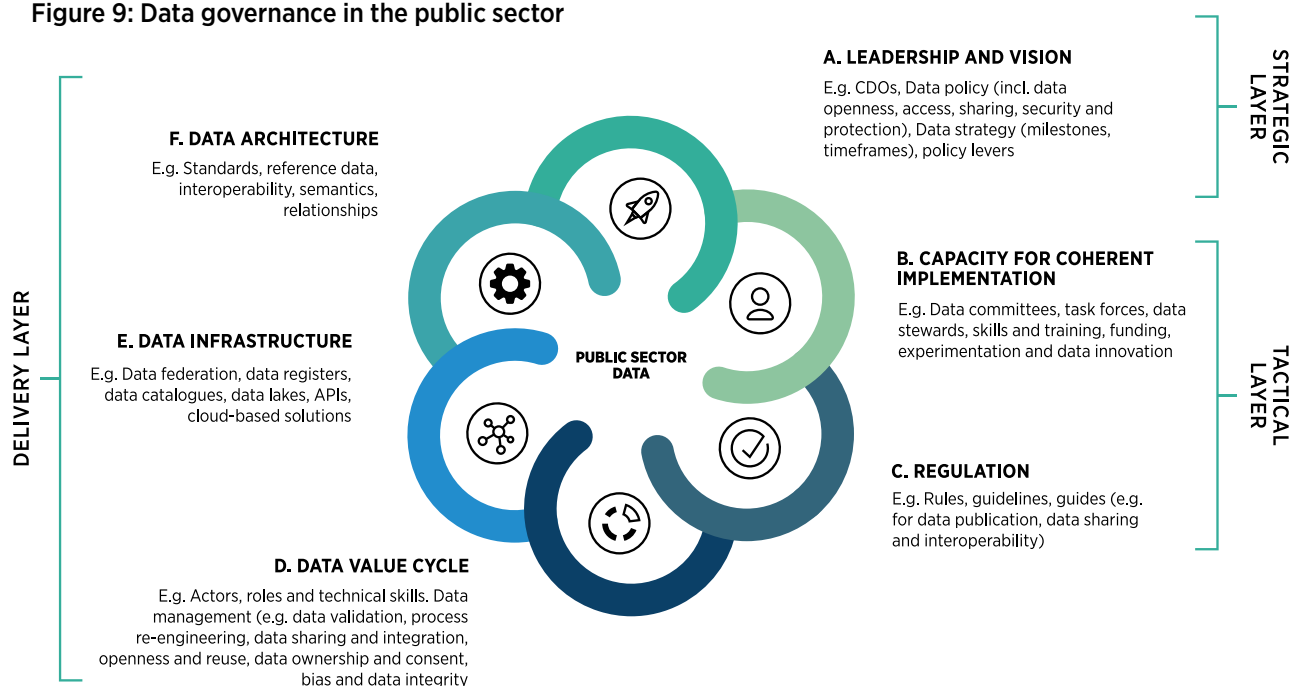
<sup>37</sup> The OECD’s cross-cutting work in this area is evident in its Going Digital project, which aims to help policy makers better understand the digital transformation and develop appropriate policies to help shape a positive digital future. See [www.oecd.org/digital](http://www.oecd.org/digital).

<sup>38</sup> <https://digitalregulation.org/cross-border-collaboration-in-the-digital-environment-2>.

efforts and put in place a systems approach to help leverage data for better policies and services in an efficient, transparent and trustworthy manner (Figure 9) (OECD, 2019e). While initially considered

for bolstering domestic data. Governance, this approach also strengthens cross-border capacities by enhancing the governance maturity of different cross-border ecosystem players.

**Figure 9: Data governance in the public sector**



Source: OECD (2019a).

In recognition of the need to collectively build a common vocabulary and build consensus on pathways forward, governments from around the world are indeed collaborating to devise ways to overcome barriers and clear paths for data sharing, while ensuring protective measures are in place to ensure data security and personal privacy. Such actions involve cross-border collaboration at a variety of levels.

At the supranational level among a large cross-set of countries, a declaration of the 2020 G20 Digital Economy Ministers Meeting included a key pledge

supporting “data-free flow with trust and cross-border data flows”. As touched on above, the EU’s proposed Data Governance Act also seeks to create a framework for cross-border data sharing among member states (European Commission, 2020c). Research has shown that intergovernmental organisations (IGOs) such as the OECD play a particularly positive role in supporting knowledge transfer through surfacing commonalities and consensus building around common norms and rules.

<sup>39</sup> [www.g20.utoronto.ca/2020/G20SS\\_Declaration\\_G20\\_Digital\\_Economy\\_Ministers\\_Meeting\\_EN.pdf](http://www.g20.utoronto.ca/2020/G20SS_Declaration_G20_Digital_Economy_Ministers_Meeting_EN.pdf).

<sup>40</sup> <https://www.oecd.org/gov/regulatory-policy/irc.htm>.

<sup>41</sup> <https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0463>.

These can then be used to shape national policies that promote innovation in ways that are internationally aligned (Jandhyala and Phene, 2015). The OECD's work on International Regulatory Co-operation (IRC) is a prime example here,<sup>40</sup> while the adoption in June 2021 of the OECD Recommendation on Enhancing Access to and Sharing of Data (EASD)<sup>41</sup> represented a groundbreaking achievement at this level. The latter was the first internationally agreed upon set of principles and policy guidance on how governments can maximise the cross-sectoral and cross-border benefits of access to and sharing of data, while protecting individuals' and organisations' rights. Through their adherence to the recommendation, all 38 OECD member countries plus Brazil have demonstrated their commitment to developing coherent data governance policies and frameworks to unlock the potential benefits of data across and within sectors, countries, organisations and communities. Box 4 shows key relevant provisions.



## Box 4: Excerpts from the OECD Recommendation on Enhancing Access to and Sharing of Data (EASD)

VII. RECOMMENDS that Adherents further improve conditions for cross-border data access and sharing with trust. To this effect, Adherents should:

1. Assess, and to the extent possible minimise, restrictions to cross-border data access and sharing, in particular for purposes of global public interest.
2. Ensure that measures that condition cross-border data access and sharing are non-discriminatory, transparent, necessary and proportionate to the level of risk.
3. Promote continued dialogue and international co-operation on ways to foster data access and sharing across jurisdictions, including through the interoperability and mutual recognition of data access and sharing arrangements.

Other relevant provisions recommend that adherents:

- Empower and pro-actively engage all relevant stakeholders alongside broader efforts to increase the trustworthiness of the data ecosystem.
- Adopt a strategic whole-of-government approach to data access and sharing.
- Seek to maximise the benefits of measures for enhancing data access and sharing, while protecting individuals' and organisations' rights.
- Provide coherent incentive mechanisms and promote conditions for the development and adoption of sustainable business models and markets for data access and sharing.
- Foster the findability, accessibility, interoperability and reusability of data across organisations and sectors.
- Adopt measures to enhance the capacity of all stakeholders to effectively use data responsibly along the data value cycle.

Source: <https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0463>.

Other IGO-driven initiatives initiated by the UN are emerging. These include the Digital Public Goods Alliance,<sup>42</sup> a multi-stakeholder initiative to accelerate the attainment of the SDGs by “facilitating the discovery, development, use of, and investment in digital public goods” (United Nations, 2020). While not explicitly about data flows, this initiative would necessitate better access to and sharing of data. A more data-centric effort is the Global Data Access Framework (GDAF),<sup>43</sup> the main objective of which is to “enable data sharing across the public and private sector in a privacy-protective manner”, with an emphasis on developing and scaling AI-driven projects. Co-led by the United Nations Global Pulse, the Future Society’s AI Initiative and McKinsey,<sup>44</sup> the initiative has over 100 cross-sector stakeholders. The GDAF aims to establish a new world data architecture enabling seamless data sharing for a universal set of global services, thus allowing “entrepreneurs, academics, and governments to unlock the potential for big data and AI for good”. The framework is being

iteratively developed over time, including by piloting approaches in tracking infectious diseases and understanding the impacts of disasters. The GDAF team is also exploring ethical governance, data market strategies and infrastructure to build out the Framework (UN Stats, 2020). While the initiative is promising, it is too early to report on developments in standards and architecture.

Moving from the macro to micro scale, governments are engaging with smaller circles to devise new ways to share, collaborate and innovate with data. The concept of “digital minilateralism” exemplifies this approach, as touched on in the first report in this series in relation to network effects,<sup>45</sup> where a small grouping of like-minded countries adopt a multilateral approach to digital collaboration with relationships at the core (see Box 5).

<sup>42</sup> <https://digitalpublicgoods.net>.

<sup>43</sup> See [www.unglobalpulse.org/policy/global-data-access-framework](http://www.unglobalpulse.org/policy/global-data-access-framework), as well as a discussion on the GDAF at <https://youtu.be/SyCHmsOIRil>.

<sup>44</sup> See [www.unglobalpulse.org](http://www.unglobalpulse.org), <https://thefuturesociety.org/the-ai-initiative> and [www.mckinsey.com/business-functions/mckinsey-analytics/how-we-help-clients/noble-intelligence](http://www.mckinsey.com/business-functions/mckinsey-analytics/how-we-help-clients/noble-intelligence), respectively.

<sup>45</sup> <https://oe.cd/cross-border-governance>.



## Box 5: (Digital) minilateralism

Minilateralism refers to small, trust-based, knowledge creating and sharing, innovation-oriented networks. Digital minilateralism describes those networks both committed to digital governance and using “digital” culture, practices, processes and technologies as tools to advance peer learning, support and co-operation between governments. They can assist in “shaping how individual governments learn, adopt and govern the use of new and emerging technologies, and how they create common or aligned policy”.

While involving a small number of countries, instances of digital minilateralism can feed into other international systems and structures. For instance, the “Digital Nations”, an alliance of some of the world’s most advanced digital governments, can serve as a “a beacon, providing shared directions of travel through its informedness, capacity for knowledge transfer, willingness to be a first mover in committing principles to paper, and ability to horizon scan on emerging issues”.

Digital minilateralism may become even more important over time as governments continue to grapple with the increasingly cross-border nature of data, digital services and associated infrastructure.



Source: [www.bennettinstitute.cam.ac.uk/media/uploads/files/Digital\\_minilateralism\\_Digital.pdf](http://www.bennettinstitute.cam.ac.uk/media/uploads/files/Digital_minilateralism_Digital.pdf) and [www.leadingdigitalgovs.org](http://www.leadingdigitalgovs.org) (image).

These types of small alliances and minilateral approaches can help convert high-level data principles, such as those contained in the OECD Recommendation on EASD, into tangible and impactful approaches and services. Relevant organisations such as the Information Technology and Innovation Foundation (ITIF)<sup>46</sup> have noted the power of digital minilateralism, finding that “building an open, rules-based, and innovative global digital economy will depend on a small group of proactive and ambitious countries working together” in order to devise “new norms, rules, cooperation mechanisms, and agreements to address legitimate concerns raised by cross-border data flows while supporting the free flow of data” (Cory and Dascoli, 2021). These elements can form the initial knowledge base and foundation of norms and resources which can then be scaled up and otherwise diffused in broader settings. The ITIF also suggested that likeminded countries come together for a “Geneva Convention for Data” to obtain agreement on issues around jurisdiction, standards, safeguards and accountability (ibid), with similar calls by others for a “technology charter of principles” (Medhora, 2021). The OECD Recommendation on EASD could function as the backbone for such an arrangement and the concrete implementation results that arise from it.

Finally, while supranational, intergovernmental and minilateral efforts generally imply collaboration mainly among public sector actors, the formation of “data collaboratives” with a cross-sector emphasis has grown in recent years.

Data collaboratives “specifically focus on collaboratively tackling public problems by sharing data” (Ruijter, 2021). Examples here include the:

- **Data4COVID19 Collaborative**<sup>47</sup> is a series of projects undertaken by the GovLab in conjunction with partners such as the OECD and other international organisations, the Open Data Charter, foundations, universities and private sector companies, to identify, collect and analyse the value data can provide to address the ongoing COVID-19 pandemic.
- **Data for Children Collaborative** with UNICEF<sup>48</sup> is a joint partnership between UNICEF, the Scottish Government and the University of Edinburgh’s Data-Driven Innovation Programme which seeks to enable improvement in outcomes for every child. It brings together partners and their networks to generate insights and solve problems using data and responsible innovative data practices.
- **Mobility Data Collaborative**<sup>49</sup> is a multi-sector forum where mobility partners gather to establish a framework for mobility data sharing to promote safe, equitable and liveable streets for all.

New York University’s GovLab has led the development of an excellent resource dedicated to data collaboratives,<sup>50</sup> including a Data Collaboratives Guide that includes eight phases for designing and implementing a data collaborative (Figure 10).

<sup>46</sup> The ITIF is a nonpartisan, non-profit think tank with a mission to “formulate, evaluate, and promote policy solutions that accelerate innovation and boost productivity to spur growth, opportunity, and progress” (see <https://itif.org>). While OPSI and the MBRCGI concur with the ITIF’s findings and the recommendations discussed here, this does not imply endorsement of all ITIF research or political positions.

<sup>47</sup> <https://data4covid19.org>.

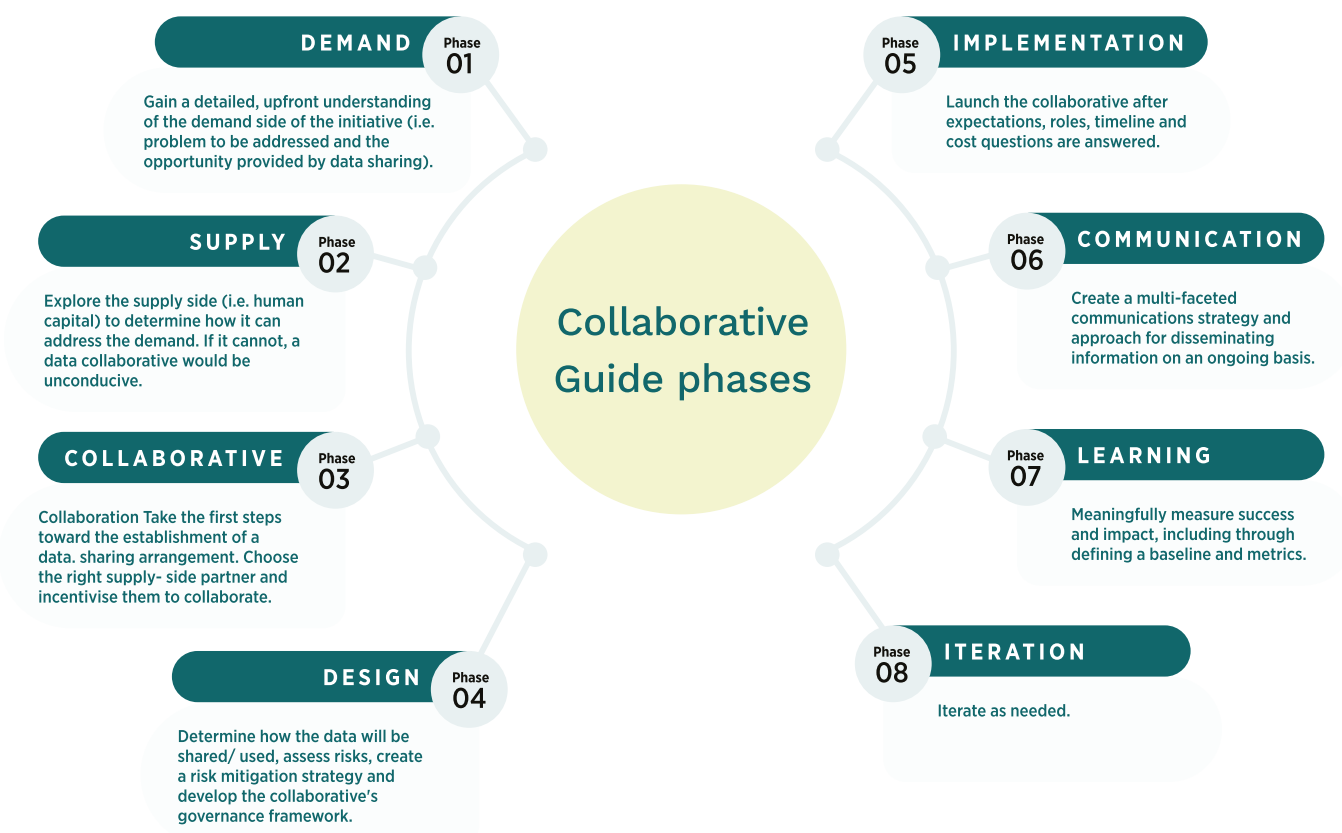
<sup>48</sup> [www.dataforchildrencollaborative.com](http://www.dataforchildrencollaborative.com).

<sup>49</sup> <https://mdc.sae-itc.com>.

<sup>50</sup> <https://datacollaboratives.org>.



Figure 10: Data Collaborative Guide phases



Source: <https://datacollaboratives.org/canvas.html>

Cross-border collaborations through multilateral and minilateral alliances and collaboratives can be innovative in their own right. However, their relevance to this report on cross-border government innovation is most clearly manifested in the novel outcomes that they can generate. For instance, commitments and actions to enhance data sharing and access among a large number of countries can produce initiatives with major innovative potential.

An example of this at the supranational level is the creation of a European Health Data Space, one of the European Commission (EC)'s priority health initiatives through 2025.<sup>51</sup> The European

Health Data Space seeks to promote access to and interoperable exchange of health data to support healthcare delivery, research and policy making in ways that protect citizens' data and support the portability of their health data.

Similarly, the European Open Science Cloud (EOSC)<sup>52</sup> provides 1.8 million European researchers and 70 million science and technology professionals with a virtual environment offering open and seamless services for scientific data across borders and disciplines. EOSC seeks to create a common data protocol base on a vision of making data findable, accessible, interoperable and reusable, or FAIR (van Reisen, 2017).

<sup>51</sup> [https://ec.europa.eu/health/ehealth-digital-health-and-care/european-health-data-space\\_en](https://ec.europa.eu/health/ehealth-digital-health-and-care/european-health-data-space_en).

<sup>52</sup> <https://eosc-portal.eu/>.

Investments in research platforms such as these provide a strong foundation. Indeed, previous OECD work has found that the field of Research Infrastructures is one of the areas to have benefited most from increased international policy collaboration in recent years. Global “grand challenges,” including threats to health, are also strong motivators for transnational collaboration (OECD, 2016).

Beyond Europe, innovative cross-border data governance frameworks have demonstrated the potential to improve public service delivery across borders (OECD, 2019b). Such data-sharing principles can be seen in the Food Security Information System (AFSIS)<sup>53</sup> of the Association of Southeast Asian Nations (ASEAN), which seeks to promote innovation for agricultural data management and use across countries in the region. Similarly, the Indonesia Gateway (I-Gateway) Hub for ASEAN Trading Documents enables international electronic data exchange, including for certificates of origin, thereby ensuring authenticity, reducing paper work and eliminating redundancy.<sup>54</sup>

Building out quality technical architecture for cross-border data flows, as shown in these examples, is one of the most important elements contributing to the success of cross-boundary data-sharing efforts (Yu-Che Chen et al., 2019; Gil-Garcia and Sayogo, 2016; Welch, Feeney and Park, 2016; Yang and Wu, 2015).

Holistic data governance enablers can also help promote Government as a Platform (one of the key dimensions of a digital government under the Digital Government Policy Framework), thereby providing “clear and transparent sources of

guidelines, tools, data and software that equip teams to deliver user-driven, consistent, seamless, integrated, proactive and cross-sectoral service delivery” in a cross-border manner (OECD, 2020c). For example, the development of common but flexible data tools (e.g. data sharing platforms) provides solutions that can be re-used across the broad public sector.

While in their relative infancy, OPSI and the MBRCGI expect these types of arrangements and architectures to continue to grow. Additionally, the World Government Summit – to which the OECD serves as a strategic partner – expects “tailored data alliances with trusted partners to generate mutual value by minimising the obstacles to cross-border digital exchange”, with such alliances shaping up to be one of the most critical priorities for governments (World Government Summit, 2021).

Several other types of efforts discussed in this series of reports can also assist governments in promoting trust and ensuring the free flow of data for cross-border government innovation. These include formal and informal governance bodies, networks and systems dynamics (report 1), which when viewed through the lens of data access and sharing can support the creation of frameworks, collective standards, codes of conduct, personal connections and dialogue, and agreed-upon mutual benefits and objectives. Likewise, cross-border methods for insights and experimentation across borders (report 2) can yield spaces such as sandboxes where governments can come together to experiment around the potentials and pitfalls of data, while also providing conduits for engagement with diverse stakeholders and the public.

<sup>53</sup> See <http://www.aptfis.org/> and <https://oe.cd/afsis>.

<sup>54</sup> See <https://oe.cd/i-gateway>.



## Box 6: Good Practice Principles for Data Ethics in the Public Sector

The Principles support the ethical use of data in digital government projects, products and services to ensure they are worthy of citizens' trust. They introduce 10 Good Practice Principles for Data Ethics in the Public Sector, including a set of specific actions which can support their implementation:

1. Manage data with integrity.
2. Be aware of and observe relevant government-wide arrangements for trustworthy data access, sharing and use.
3. Incorporate data ethical considerations into governmental, organisational and public sector decision-making processes.
4. Monitor and retain control over data inputs, in particular those used to inform the development and training of AI systems, and adopt a risk-based approach to the automation of decisions.
5. Be specific about the purpose of data use, especially in the case of personal data.
6. Define boundaries for data access, sharing and use.
7. Be clear, inclusive and open.
8. Publish open data and source code.
9. Broaden individuals' and collectives' control over their data.
10. Be accountable and proactive in managing risks.

Source: [www.oecd.org/digital/digital-government/good-practice-principles-for-data-ethics-in-the-public-sector.htm](https://www.oecd.org/digital/digital-government/good-practice-principles-for-data-ethics-in-the-public-sector.htm).

## Innovating on and re-imagining the concept of interoperability

Enhancing transnational data flows in support of innovative cross-border digital services is inextricably linked with concepts of interoperability. However, interoperability is such an important underlying element of generating value in this field that it warrants its own discussion, with governments like Japan considering interoperability to be one of the most important factors of society's transition to a new phase where cyberspace and physical space become integrated – a stage they have termed “Society 5.0” (METI, 2021).

Interoperability can take many forms, and the concept in government exists at both technical and non-technical levels.<sup>55</sup> For example, at a non-technical level, the concept of International Regulatory Co-operation (IRC) aims to promote the interoperability of legal and regulatory frameworks (OECD, 2021). Such interoperability plays a critical role in cross-border government innovation and broader advancements by aligning rules to minimise fragmentation and promote seamless implementation. Meanwhile, at a technical level, interoperability refers to the ability of a system or component to interact or function effectively with other systems or components involving the sharing of information and data through ICT systems

(OECD, 2021e). For instance, out of the 33 countries studied, the OECD Digital Government Index (DGI) found that 76% have established technical data-sharing and interoperability standards, but only 45% have initiatives in place for proper implementation (ibid).

Technical and non-technical aspects are often mutually reinforcing. For instance, interoperable data systems and Application Programming Interfaces (APIs) as well as other technical protocols and standards can be put in place to allow for integrated and innovative cross-border public services that are aligned with interoperable legal and regulatory frameworks. Some re-imagined concepts of interoperability illustrate how technical and non-technical concepts of interoperability reinforce each other, such as Rules as Code (RaC) (Box 7). The ITIF has noted that “interoperability is the most realistic goal for global data governance. It accounts for the fact that countries have differing legal, political, and social values and systems, and [that] there is no one law for any specific data-related issue” (Cory and Dascoli, 2021).

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<sup>55</sup> While described here for simplicity as “technical” and “non-technical”, these aspects can be further broken down. For instance, the European Interoperability Framework (EIF) categorises layers of interoperability as “legal”, “organisational”, “semantic” and “technical” interoperability (see [https://ec.europa.eu/isa2/sites/default/files/eif\\_brochure\\_final.pdf](https://ec.europa.eu/isa2/sites/default/files/eif_brochure_final.pdf)), whereas the ITIF considers then as “policy”, “technical”, “network and service”, and “regulatory” interoperability and “mutual recognition” (see <https://itif.org/publications/2021/07/19/how-barriers-cross-border-data-flows-are-spreading-globally-what-they-cost>).



## Box 7: Rules as Code (RaC)

Rules as Code (RaC) is an emerging approach in governments that proposes to create an official, machine-consumable version of certain types of regulation to exist alongside their natural language counterparts. Specifically, RaC is “the process of drafting rules in legislation, regulation, and policy in machine-consumable languages (code) so they can be read and used by computers”, and thus also represents a new approach to rulemaking. It would involve the use and integration of technology as well as a reimagining of the processes and methods currently used to create rules in government.

Creating a set of shared and consumable rules can drive greater interoperability between all levels of government and across national borders. Additionally, the reduced need for manual translation of rules by individual actors, and manual updating of rules and time between policy development and service delivery, could deliver efficiency gains for governments and third parties alike.

Efforts to develop machine-consumable rules often begin as efforts to aggregate and digitalise existing rules, as discussed in the 2019 OPSI-MBRCGI Global Innovation Trends report (<https://trends2019.oecd-opsi.org>) and as seen in Chile’s contribution to an “Internet of Rules” for trade, uncovered by the OPSI-MBRCGI Call for Innovations (<https://oe.cd/internet-of-rules>).

Source: <https://oecd-opsi.org/projects/rulesascode>; Mohun and Roberts (2020); de Sousa (2019).

As with many instances of cross-border collaboration discussed in this series of reports, the European Union has led the way in adopting a systems approach to fostering interoperability. In support of the EU eGovernment Action Plan,<sup>56</sup> goals to promote cross-border service delivery, the EU has put in place forcing mechanisms to catalyse progress alongside a suite of important enablers of cross-border interoperability that can facilitate the creation of innovative cross-border public services (see Box 8 for details).

<sup>56</sup> <https://digital-strategy.ec.europa.eu/en/policies/egovernment-action-plan>.

## **Box 8: European Union catalysts and enablers for digital cross-border government innovation**

### **Catalyst: Single Digital Gateway Regulation**

Passed in 2018, single digital gateway regulation facilitates online access to information, administrative procedures and assistance services that EU citizens and businesses may need in another EU country. Since its passage, the European Commission and national governments have been developing relevant cross-border portals and services.

### **Catalyst: The Once-Only Principle**

The Once-Only Principle (OOP) ensures that citizens and businesses provide data to public administration only once, while public bodies exchange these data when requested and in compliance with the relevant regulations.

From January 2017 through March 2021, The One-Only Principle Project (TOOP) brought together 50 organisations from 20 EU member states to explore and demonstrate the once-only principle on a cross-border, pan-European scale. As part of its deliverables, TOOP developed a generic federated OOP architecture, and overview of the legal and regulatory landscape, accompanied by an analysis of drivers and barriers for OOP, among other things.

One of TOOP's main tasks was to ensure the long-term sustainability of OOP. This has resulted in the spin-off non-profit organisation ONCE-ONLY.org, the mission of which is to “facilitate and promote international cooperation of public and private stakeholders aiming to advance and enhance the once-only principle and other underlying principles for e-Governance and the interoperability solutions and practices that support them”.

### **Enabler: the European Interoperability Framework (EIF) and Interoperable Europe**

Adopted in March 2017, the EIF provides 47 concrete recommendations on how to improve governance of public sector interoperability activities, establish cross-organisational relationships, streamline processes supporting end-to-end digital services, and ensure that both existing and new legislation do not compromise interoperability efforts.

Interoperability Europe is leading the process of achieving interoperability goals and is committed to introducing a new co-operative Interoperability policy for Europe that will transform public administrations and help them facilitate the process of digital transformation.

## **Enabler: eIDAS (electronic IDentification, Authentication and trust Services)**

eIDAS is an EU regulation passed in July 2014 that sets standards for digital identification and trust services for electronic transactions in the European Single Market – including electronic signatures and proof of authentication. It is designed to facilitate interoperable and seamless digital interactions across the European Union. Since September 2018, usage of a compatible digital identity system has been mandatory.

## **Enabler: Common Vocabularies and Models**

The EU has sought to develop common vocabularies and models for interoperable digital public services. For example, the Core Public Service Vocabulary Application Profile (CPSV-AP) is common data model for describing public services offered in public administrations. It standardises the semantics of personal milestones (e.g. having a child, professional changes).

Source: Protopappas, Sideridis and Yialouris (2020); [https://ec.europa.eu/growth/single-market/single-digital-gateway\\_en](https://ec.europa.eu/growth/single-market/single-digital-gateway_en); [www.toop.eu](http://www.toop.eu); <https://once-only.org>; [https://ec.europa.eu/isa2/home\\_en](https://ec.europa.eu/isa2/home_en); [https://ec.europa.eu/isa2/eif\\_en](https://ec.europa.eu/isa2/eif_en); [https://ec.europa.eu/isa2/solutions\\_en](https://ec.europa.eu/isa2/solutions_en).

Having demonstrated their potential in a European context, we can see some of these mechanisms being disseminated and scaled up in trans-continental ways. For instance, OPSI and the MBRCGI have identified new concepts of interoperability emerging as part of the Agile Nations initiative (Box 9). Specifically, Canada and the United Kingdom are collaborating on a series of activities to foster interoperable digital credential

solutions, with Singapore serving as an observer.<sup>57</sup> Together, they will develop joint proofs of concept and pilots for digital credential use cases, as well as a series of joint workshops for enabling interoperability and mutual support for digital credentials. This project will help demonstrate how successes in one region can help trigger more significant and potentially global shifts.

<sup>57</sup> See [www.gov.uk/government/publications/agile-nations-work-programme-plan-2021-to-2022/agile-nations-work-programme-plan-2021-to-2022#digital](http://www.gov.uk/government/publications/agile-nations-work-programme-plan-2021-to-2022/agile-nations-work-programme-plan-2021-to-2022#digital) for details.

## Box 9: Agile Nations

In late 2020, seven countries (Canada, Denmark, Italy, Japan, Singapore, the United Arab Emirates and the United Kingdom) signed the Agile Nations Charter, an international agreement aimed at unlocking the potential of emerging technologies by fostering responsible innovation and entrepreneurship. The agreement, supported by the OECD and the World Economic Forum (WEF), lays out the countries' commitments to creating an ideal regulatory environment for new ideas and innovations to flourish while safeguarding the interest of citizens and of the natural environment.

The intergovernmental regulatory co-operation network of signing countries aims to foster wider and stronger regulatory co-operation across the globe, promoting good practices in rulemaking, including:

- anticipating and identifying innovations and the opportunities and risks they present in a timely way while engaging openly with stakeholders on how these opportunities and risks should be managed
- implementing rules in ways that harness the potential of digital and other technologies to minimise the administrative burden of compliance
- exploring opportunities to jointly test approaches to rulemaking through collaborative initiatives
- identifying opportunities to develop interoperable rules relating to innovations
- co-ordinating enforcement activities as necessary to manage cross-border risks from innovations and strengthening mutual capability-building to enhance shared learning opportunities

In the year following the signing of the agreement, the network has developed several projects across its six priority work streams: pro-innovation approaches to regulation; data and communications; green tech; medical devices and treatments; mobility; and professional business services.

Source: <https://oe.cd/agile-nations>, <https://gov.uk/government/publications/agile-nations-charter>.



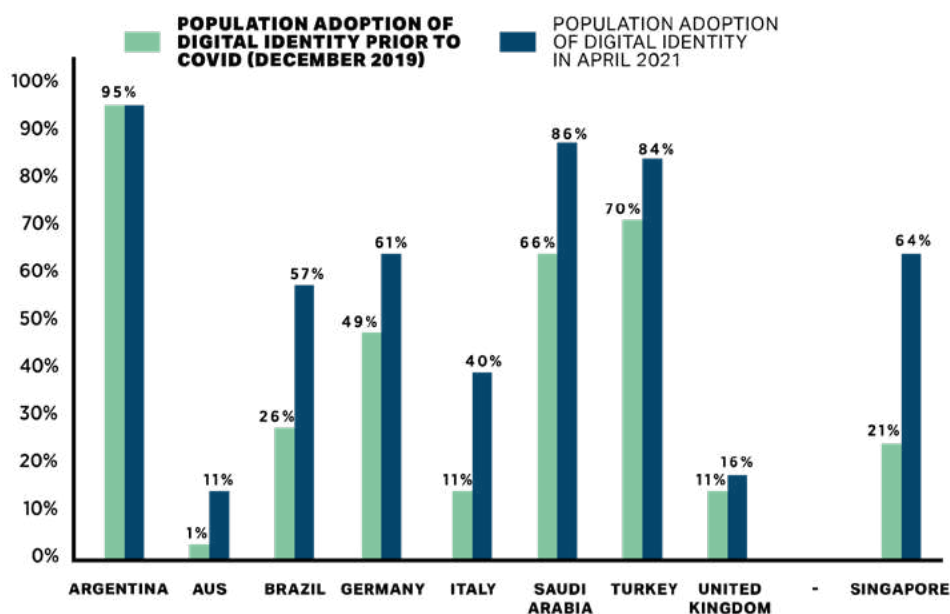
## Innovating on and re-imagining the concept of interoperability

Another approach to managing digital identity for cross-border efforts involves leveraging a third-party broker. For instance, the Global Financial Innovation Network (GFIN)<sup>58</sup> has supported fintech companies to collaborate with regulators to enhance cross-border service delivery. Examples include Onfido, a digital identity verification start-up that verifies identities and documents from about 200 countries (Kay, 2019). To further explore the important topic of identity, the OECD in collaboration with the G20 has developed the “G20 Collection of Digital Identity Practices” (OECD, 2021h), which includes dedicated discussions on cross-border and cross-service portability.

This illustrates how the use of digital identity has increased significantly in a number of countries since the start of the COVID-19 pandemic, which better positions them for both domestic and cross-border efforts (see Figure 11). The resulting 2021 G20 Digital Ministers meeting resulted in a declaration specifically acknowledging digital identity as critical to meeting the “needs and expectations of public and private sector users”, and promoting international dialogue with a view to “harmonising digital identity standards and regulations as a key to achieving interoperability between different platforms and frameworks” (G20, 2021).

<sup>58</sup> The GFIN is a network of over 70 public sector and financial organisations committed to supporting financial innovation in the interests of consumers [www.thegfin.com](http://www.thegfin.com).

Figure 11: Adoption of digital identity among the population in G20 countries



Note: Data are not available for the remaining G20 countries. Although Singapore is not a G20 member, it has been invited to participate in G20 Summits for a number of years.

Source: OECD G20 Digital Identity Survey, <https://assets.innovazione.gov.it/1628073752-g20detfoecddig-italid.pdf>.

Even with some common, cross-cutting enablers in place, individual governments must still do some heavy lifting to ensure the interoperability of their own data and systems, in order to unlock seamless collaboration and service delivery opportunities with others. When it comes to implementing initiatives focused on

interoperability, public sector efforts vary in innovation potential. For instance, one approach that can prove effective but perhaps not innovative is the mutual acceptance of data, whereby governments agree to recognise the data and results generated by other governments.<sup>59</sup>

<sup>59</sup> <https://www.oecd.org/env/ehs/mutualacceptanceofdatamad.htm>.

Another approach that is perhaps more advanced but no longer viewed as leading edge is collaboration between countries to populate centralised databases or platforms with data for common use (OECD, 2021d). However, the most innovative cross-border approaches in the public sector involve governments with decentralised systems collaborating to create innovative platforms for interoperable data exchange. An excellent example that marries the discussion on minilateral digital collaboration for data sharing, while achieving interoperability, is the X-Road Trust Federation for Cross-Border Data Exchange (see the case study later in this chapter).<sup>60</sup> This case study perfectly illustrates how strong data governance in the public sector is critical to paving the way forwards to shared governance arrangements for data when dealing with cross-border data flows (see the discussion around Figure 9).

Outside of the EU-based examples discussed in Box 8 and some useful information on the OECD Going Digital Toolkit theme area of “data and data flows”<sup>61</sup>, there appear to be fewer practical resources and methods supporting cross-border interoperability relative to other topics discussed in this series of reports, which may hold back progress in cross-border government innovation. However, one particular innovative approach has demonstrated strong promise: “connectathons”.

Similar to “hackathons” – collaborative sprints around data and other projects – which have become a common feature of public sector digital efforts, connectathons serve as “a means to facilitate the early detection and resolution of potential barriers to the effective joint development and piloting of technological system” (Lampoltshammer, 2019). Connectathons can be especially important and useful in working out issues of interoperability (both technical and non-technical) and uncovering potential barriers, such as those related to “legacy systems, legacy systems, political issues, or organisational and communicational blockers”(ibid) through building prototypes that are aligned with broader aims (e.g. the Once-Only Principle or other common cross-border goals). One of the most mature example is organised by Integrating the Healthcare Enterprise (IHE) Europe, which for years has run five-day connectathons to test the interoperability of health information systems.<sup>62</sup>

<sup>60</sup> See <https://x-road.global/> and <https://oe.cd/xrtf>.

<sup>61</sup> <https://goingdigital.oecd.org/theme/7>.

<sup>62</sup> See <https://connectathon.ihe-europe.net/IHE> issued a white paper explaining what connectathons are and how they are conducted (see [https://www.ihe-europe.net/sites/default/files/WP\\_Connectathon\\_2019\\_0.pdf](https://www.ihe-europe.net/sites/default/files/WP_Connectathon_2019_0.pdf)). While specific to IHE connectathons, the general methods and processes may be replicable for other connectathons.

Figure 12: IH-Europe Connectathon



While the EU has made tremendous progress, the implementation of cross-border services across the region, including through underlying interoperability drivers and enablers, remains fragmented and has not yet meet the EU's own implementation goals. However, the EU remains ahead of the curve, with other countries largely still to undertake major actions to promote the delivery of innovative and responsive cross-border digital services.

It important to note that both technical and non-technical interoperability for cross-border government innovation necessitate top-down governance and direction, as well as bottom-up insights and contributions from a wide ecosystem of relevant stakeholders and the public. Leveraging or putting in place top-down and bottom-up governance structures can facilitate the G20's aim of "sharing experiences and good practices for data policy, in particular interoperability and transfer mechanisms, and identifying commonalities between existing approaches

and instruments used to enable data to flow across borders with trust." The first two reports in this series provide details and real-world examples on how this can be achieved.<sup>63</sup>

## Emerging technologies yield new promise and new implications

The most recent area – and therefore the least developed – which OPSI and the MBRCGI have identified as enabling innovation in cross-border public services is leveraging emerging technologies. In general, the most significant government efforts in the use of emerging tech for digital services revolve around artificial intelligence (AI) (OECD, 2019c). AI-driven cross-border services rely on the free flow of data and data governance and interoperability, which are important for all types of digital services. In terms of putting in place new types of data architectures to enable cross-border digital services, governments have

<sup>63</sup> See <https://cross-border.oecd-opsi.org>.



also explored the use of blockchain and other distributed ledger technologies (DLTs). This is consistent with broader trends discussed above, whereby innovative governments have been moving towards decentralised interoperable architectures for cross-border data exchange and interoperability.

Governments have been moving towards decentralised interoperable architectures for cross-border data exchange and interoperability.

While blockchain has been a hot topic in the public sector for several years now (OECD, 2018), there remains confusion about the subject and the potential impact for government. This is particularly true for cross-border applications. Recent research indicates that blockchain indeed has potential to enable cross-border public services, and that it can be more advantageous compared to other technologies in terms of usability and synchronisation among all entities involved (Geneiatakis et al., 2020). It is also well suited to providing transparency, ensuring security and establishing trust in digital services, depending on its governance and how it is applied.

For the most part, OPSI and MBRCGI research and the Call for Innovations have produced only a few ad-hoc instances of cross-border blockchain among governments. For instance:

- The United Nations Economic Commission for Europe (UNECE) has developed an open source blockchain system to enable industry actors to track and trace sustainability and circularity claims for cotton clothing based on the UN standard for

traceability and transparency of value chains in countries such as Egypt, Germany, Italy, Switzerland, the United Kingdom and the United States.<sup>64</sup>

- The Government of Estonia, in collaboration with the Government of Luxembourg, has developed the world's first "data embassy", servers outside of the country that are legally under Estonian jurisdiction where digital copies of key databases are stored and can be accessed in the event of a major data incident in the country.<sup>65</sup> The embassy uses distributed blockchain technology to ensure data integrity.

However, foundations are being laid for more extensive deployment of public sector blockchain across borders. The primary example is the effort by the European Union to build out a European Blockchain Services Infrastructure (EBSI) (Box 10).

<sup>64</sup> The OECD has produced guidance for sustainable business conduct in supply chains for the garment and footwear sector. For more information, see:

<http://mneguidelines.oecd.org/OECD-Due-Diligence-Guidance-Garment-Footwear.pdf>.

<sup>65</sup> See the full OPSI-MBRCGI case study at

[www.oecd.org/gov/innovative-government/Estonia-case-study-UAE-report-2018.pdf](http://www.oecd.org/gov/innovative-government/Estonia-case-study-UAE-report-2018.pdf).

## Box 10: European Blockchain Services Infrastructure (EBSI)

EBSI is a joint initiative of the European Commission and all of its member states plus Norway and Lichtenstein (operating collectively as the European Blockchain Partnership). It provides a common, shared and open infrastructure based on blockchain technologies aimed at providing a secure and interoperable ecosystem that will enable the development of cross-border digital services in the public sector. EBSI is fully compliant with EU law in terms of privacy, cybersecurity, interoperability and energy efficiency.

EBSI is organised into a network of distributed nodes with applications focused on specific use cases. Four use cases were selected initially in 2019 and different pilots are being built to address each case. The four blockchain use cases selected are as follows:

- **Notarisation** focuses on creating audit trails, automatic compliance checks and proving data integrity.
- **Diplomas** involves consent management related to access to educational credentials, cost reduction for verification and increasing diploma credibility.
- **European self-sovereign identity** gives users the ability to create and control their identity credentials.
- **Trusted data sharing** provides a means for secure data sharing among customs and tax authorities.

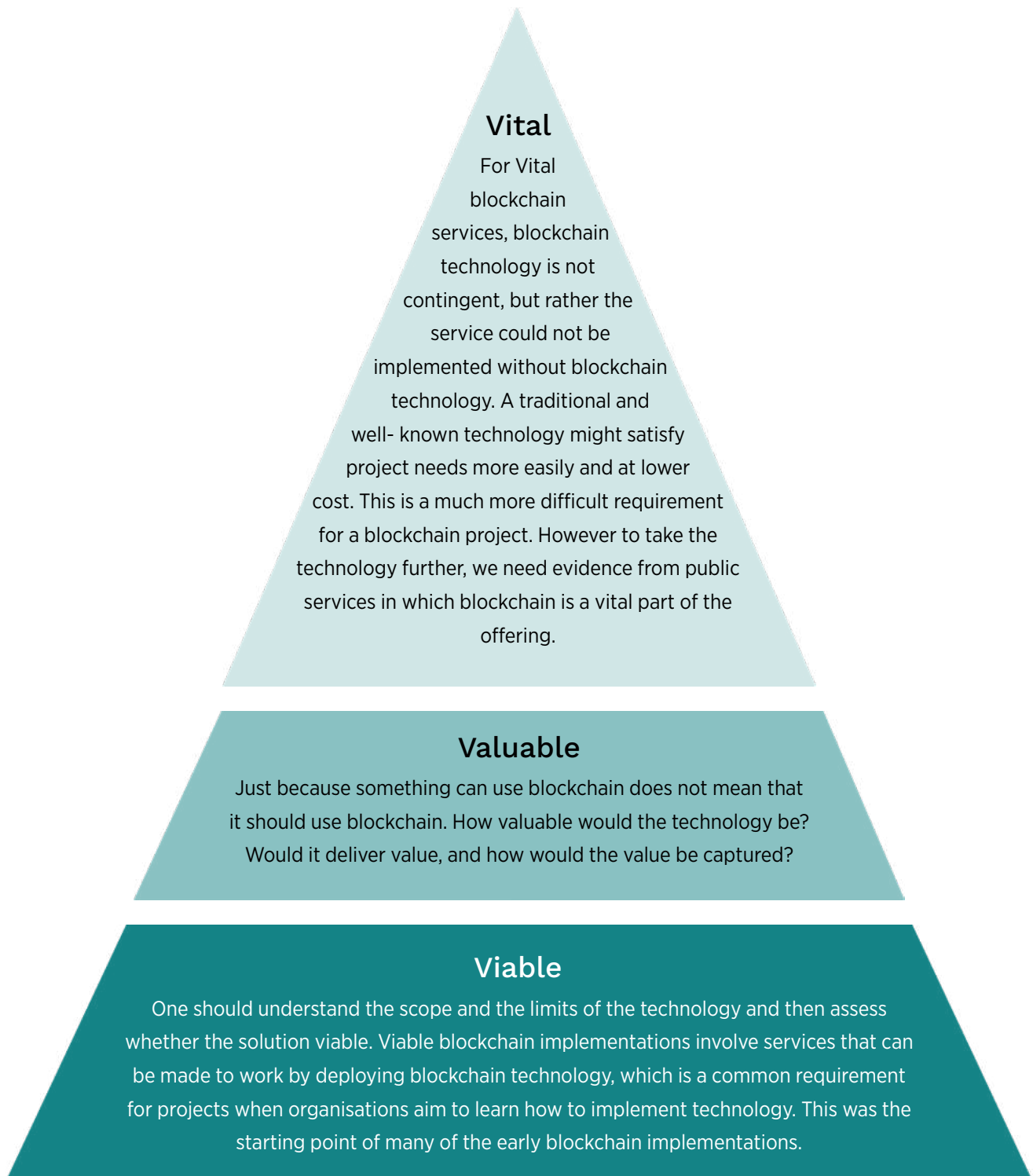
The EBSI project provides not only technical underpinning through its APIs and Sample Applications, but also services including community management, connectivity testing, a knowledge base, a service desk and training.

Sources: <https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/EBSI>.

While governments continue to pursue blockchain technology, which may serve as a valuable enabler of cross-border government innovation, it has some limitations and drawbacks. As with other data-driven technologies, in a cross-border context it must comply with varying national and international rules and regulations, so any challenges related to data sharing and interoperability in this space still apply (WEF, 2020). More specifically to blockchain, public sector transformation and innovation efforts so far have had mixed results. While OPSI and other OECD work over recent years have surfaced hundreds of public sector blockchain initiatives and provided valuable lessons (Ubaldi et al., 2019; OECD, 2018), there have been no observed breakthrough innovations in government, or many projects that have moved beyond proofs of concept or small pilots. In parallel, there have been a number of public sector blockchain controversies amid growing scepticism and cynicism about the use of blockchain in government (Lindman et al., 2020).

The recent OECD report, *The Uncertain Promise of Blockchain for Government*, helps to explain why this is the case. Among other things, the report outlines a framework for considering whether blockchain is worth pursuing (Figure 13), explores ten widely held myths about blockchain in the public sector, surfaces key factors behind public sector blockchain successes as well as failures, helps governments ensure organisational and team preparedness through digital government maturity, and provides a series of case studies on blockchain on the front lines of public services (ibid). Governments should consider the findings and recommendations of this report in their blockchain ambitions and pursuits, especially in seeking to develop innovative blockchain-enabled cross-border services, which bring with them even more complexity.

**Figure 13: Blockchain projects should be viable, valuable and vital**



Source: [www.oecd-opsi.org/uncertain-promise-blockchain](http://www.oecd-opsi.org/uncertain-promise-blockchain), as adapted from [www2.deloitte.com/us/en/insights/deloitte-review/issue-16/cognitive-technologies-business-applications.html](http://www2.deloitte.com/us/en/insights/deloitte-review/issue-16/cognitive-technologies-business-applications.html).





# The X-Road Trust Federation

## Estonia and Finland

The Governments of Estonia and Finland are exchanging interoperable data across borders via an X-Road Trust Federation,<sup>66</sup> an initiative that joins two X-Road ecosystems<sup>67</sup> for cross-border data exchange. The countries had already developed and implemented their own national data exchange layers based on the X-Road technology, an open-source software solution that provides unified and secure data exchange between organisations.

The two instances now communicate with each other in the first international interoperability ecosystem of its kind, facilitating the real-time availability of information on population and businesses in the face of increasing trans-border economic activity. Such availability and sharing of information support efficiency, effectiveness and a more seamless experience for a range of public services.

their borders. This significant level of connectedness impacts on employees commuting between the two countries for employment and for businesses operating in trade, services and the secondary sector, both nationally and across borders. The national border between the two countries also impacts everyday citizens, who, for example, must travel to visit family members or attend medical appointments.

### Context

Estonia and Finland have a range of deeply connected economic activities with many businesses spanning

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<sup>66</sup> <https://oecd-opsi.org/innovations/x-road-trust-federation-for-cross-border-data-exchange>.

<sup>67</sup> <https://x-road.global/trust-federation>.

**Figure 14: Example of early digital Estonia-Finland collaboration – the world’s first digitally signed international agreement in 2013**



Source: <https://estonianworld.com/technology/estonia-finland-become-first-world-digitally-sign-international-agreement>.

Since 2019, initial discussions on initial data exchanges have pursued on the topic of population management and core labour market information on workers and businesses. Estonia and Finland, respectively, have already developed and implemented national data exchange layers to enable interoperability across government agencies within their own countries. Both data exchange platforms – “X-tee” in Estonia and the “Suomi.fi Data Exchange Layer” in Finland – are based on the same technology, X-Road (see Box 11).

## Box 11: The X-Road Platform

X-Road is a distributed data exchange layer between information systems that provides a standardised and secure way to produce and consume data services (i.e. to share data between organisations and systems). It is a modular, easy-to-adopt, easy-to-use, cloud-native, secure and sustainable data exchange solution.

X-Road implements a set of standard features to support and facilitate data exchange and ensures confidentiality, integrity and interoperability between data exchange parties. Possible features of X-Road include: address management, message routing, access rights management, organisation-level authentication, machine-level authentication, transport-level encryption, time-stamping, digital signature of messages and error handling.

An X-Road ecosystem is a community of organisations using the same instance of the X-Road software for producing and consuming services. The core software itself was created in Estonia and is now used by several governments around the world. The primary technology is managed and has been further developed by the Nordic Institute for Interoperability Solutions (NIIS), which is in itself a cross-border collaboration between Estonia, Finland and, more recently, Iceland.

Given that the X-Road technical platform was released as open source under an MIT license and is available free of charge, the potential for cost-efficient replication and broader application is high. Interoperability platforms based on the X-Road technology have been deployed in other countries around the world, including in Europe, Africa and Latin America. As they all rely on the same technology, they potentially make a case for cross-border data exchange. The goal is to consistently increase the efficiency of regions' or countries' public administration by opening up information systems and exchanging data across government institutions via the Internet to provide better services to citizens and businesses. This could be expanded, for example, to travel and education policy domains.

As an example, an X-Road Trust Federation could be created in Latin America between countries where X-Road has been adopted (e.g. in Brazil or Argentina, or a group of countries from different parts of the world, connecting Estonia, Mexico and Japan) or between sub-national governments within the same nation.

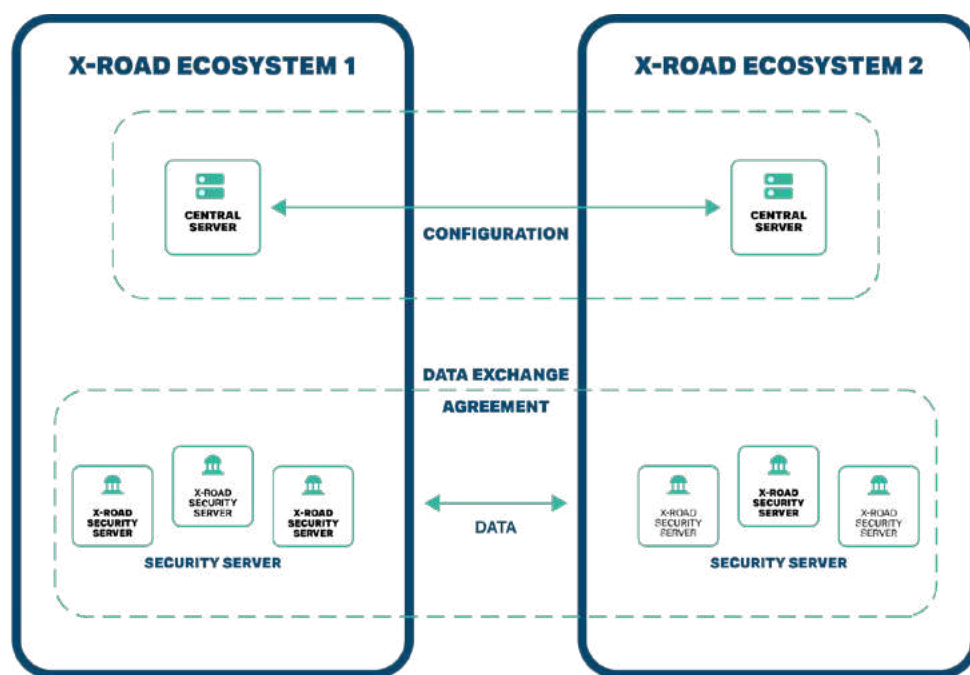
Sources: <https://x-road.global/x-road-technology-overview>.

With ever-increasing global economic integration, and given the technological feasibility, the two neighbouring countries saw an immense opportunity to strengthen their relationship and create more seamless services for the people and companies living or doing business between the two states. With all the prerequisites in place, the two governments created the world's first X-Road Trust Federation.

## An innovative solution

The X-Road Trust Federation is a bridge between two instances of the X Road platform.<sup>68</sup> X-Road is an open - source software solution that enables unified and secure data exchange between organisations. Importantly, as with any platform, there are accompanying governance structures, rules, norms and legislation in place. The X-Road Trust Federation brings together the countries' two X-Road ecosystems for the purpose of cross-border data exchange. Government agencies in the two countries are now starting to exchange relevant census and labour market data on population and businesses via the Internet, across borders.

Figure 15: Connecting the X-Road Trust Federation ecosystems



Source: <https://x-road.global/trust-federation>.

The X-Road Trust Federation seeks to achieve a range of outcomes to support better public services and economic prosperity for Finland and Estonia. These outcomes include:

<sup>66</sup> <https://x-road.global/trust-federation>.



- Making information on Estonian and Finnish residents, workers and businesses more readily available to relevant government counterparties to perform routine checks, provide operational permits and maintain a high level of data accuracy across borders more seamlessly.
- Allowing governments to keep pace with increasing economic and market interdependence between the two countries, with the objective of smoothing public service provision to citizens, workers and entrepreneurs.
- Enhancing capacity building on data exchanges between the two countries. With political agreements on cross-border information access already in place, X-Road offers an easy-to-deploy solution to support such exchanges from a technical point of view.

This exchange of information was achieved by capitalising on previous national successes in interoperability across government agencies in the respective countries, including by aligning with and leveraging existing infrastructure and standards. As with domestic data inquiries, data exchange does not occur automatically, but requires a legal basis and consent.

The Federation provides an umbrella governance structure that allows data-sharing platforms to be utilised for a range of use cases into the future, as determined by common priorities between Estonia and Finland. To start exchanging specific data on the platform, the Estonian and Finnish government agencies prepared a bilateral agreement setting the standards for the information exchange, including provisions on data quality, responsibilities for granting the exchange of information and any limitations. In a national X-Road environment, such formalised

understanding is reached between the respective parties belonging to the public administration or with the inclusion of private sector service providers. In the case of a cross-border X-Road Trust Federation, counterparties from Estonia and Finland need to establish bilateral agreements to agree on the specifics for exchange information across borders seamlessly. As in a domestic ecosystem, they agree on what data would be available, in what form, and with what conditions or limitations. This process ensures that the actual services are able to function properly and as expected if reliant on automated data flows from another country. In some cases, depending on the domestic law, an intergovernmental agreement might be necessary even if the national law otherwise restrains the sharing of data across borders.

In Finland and Estonia, to date, three government agencies are currently engaging in secure data exchange via the X-Road Trust Federation:

- The Estonian (EMTA) and the Finnish (VERO) tax boards are piloting work on sharing digital tax records. Estonia exchanges information with the Finnish tax authorities based on individual inquiries, and Finland can ask the Estonian Tax and Customs Board for salary information and company VAT declarations based on employee ID. The Estonian Tax and Customs Board receives salary information from Finland based on both the employee ID and the employer ID.
- The Estonian Ministry of Justice and the Finnish Patent and Registration Office (PRH) are working together to exchange relevant information on businesses. Judicial assistants use this data in different ways in their daily work – for example, to understand basic information on whether the company exists and its registry code, or to access more detailed information about the identity of the members of the management board.

- The Population Register of Estonia and the Finnish Digital Agency (DVV) are in the final stages of negotiating an agreement between the Ministry of Finance of Finland and the Ministry of the Interior of Estonia to digitally share population data in a more efficient, transparent and responsible way.

All of these cases have enabled government authorities to carry out public procedures more smoothly. Currently, the main direct benefit for officials within government is the ability to access and retrieve relevant information from the other authority more quickly. Such benefits can provide more seamless, efficient and effective interactions and services for the citizens of Estonia and Finland.

The focus now lies on the identification of other potential use cases within the X-Road Trust Federation environment. So far, the cross-border data exchange has been limited to government agencies, but the possibility exists to remove barriers to utilisation for private sector organisations, especially concerning granting access to data and setting the necessary security standards.

## Novelty

Although the exchange of data between agencies across borders is not a new development, the uniqueness of this case study consists in the federating of two interoperability ecosystems in their entirety. Data exchange previously enabled in a national context within Estonia and Finland by their respective X-Road-based platforms has now broadened the sharing of information across borders and continues to offer a cross-border platform that can be applied to numerous cases or policy domains into the future. Furthermore, the ease and opportunity that the X-Road Trust Federation offers for scaling is novel, and not just in Finland and Estonia.

If other countries utilise the X-Road platform, it makes sense to integrate them and use the opportunity to offer more efficient and seamless services. The technical basis for this scenario is built into the X-Road technology and as such allows for more use cases to emerge, whether in public or private organisations (e.g. in the travel sector), or for sharing university data among students.

## Impact and potential

Today, public sector agencies currently federated between Estonia and Finland are the principal users of the X-Road Trust Federation. Organisations already included in the respective national ecosystems also benefit from the federated data exchange setting.

The benefits are immediately identifiable in terms of organisations' decreased workload, with reductions in unnecessary paperwork and request processing times. Public officials can access the data they need more seamlessly, leading to shorter waiting times, increased information availability and greater data accuracy.

Overall, service provision becomes more hassle-free for the public administration involved. As full implementation is reached, paper movement will basically stop, driving further efficiency and seamless services.

As a consequence, the recipients of such public services – whether citizens, workers or businesses – enjoy a more efficient public sector. Their data are automatically made available to the government entities with whom they interact, removing the need to

update personal or company-related information more than once. As a consequence, the recipients of such public services – whether citizens, workers or businesses – enjoy a more efficient public sector. Their data are automatically made available to the government entities with whom they interact, removing the need to update personal or company-related information more than once. Moreover, citizens and companies indirectly benefit from X-Road as end-users of the services more efficiently and more smoothly provided by the public sector.

Overall, the X-Road Trust Federation offers the potential for a unified digital government and economy, one where there is no material difference between administrations in digital service and bureaucracy space, making it easy to move or do business between countries. Ultimately, it opens up the possibility of a future where citizens do not even realise they are dealing with two different governments and where such cross-border sharing of information can also support broader international co-operation.

## Challenges and lessons learned

In the case of the X-Road Trust Federation, the technology was already in place. The primary challenges related to the need to align broader governance, priorities and foundational supports between the two countries. One important lesson learned was that the sharing information across borders requires a level of digital, data and service maturity in both countries. These need to be in place domestically to a certain and similar degree before both countries can engage in cross-border data exchange. Without this, countries may experience differences in appetite and advocacy for cross-border data exchange, or struggle to collaborate due to misaligned practices.


Such challenges were at times experienced by Finland and Estonia in building the X-Road Trust Federation. While one country was trying to convince domestic agencies of adopting foundational digital and data practices, the other may have been using similar practices for a long time. As such, Estonia and Finland looked for opportunity areas that could be adapted to varying maturity levels. This also highlights the importance of early consideration by governments of foundational and systemic change to enable cross-border data exchange. The positive, direct effects of such a shift in approach would enable better and faster implementation of bilateral agreements and help to avoid problems that might arise when scaling up the platform and ease adoption in other domains for new use cases.

Ensuring aligned governance structures and approaches also allows for effective mutual prioritisation of key issues, policy domains or use cases, which is critical to building an imperative for cross-border collaboration. Finland and Estonia both have priority issues and policy challenges; however, such priorities were not always the same. Both governments used a priority vs feasibility matrix to agree on mutual use cases. However, aligning and pursuing cross-border data sharing exchanges more generally requires continued stewardship and consideration of broader regional strategies, such as, in this case, European Union strategies and agreements on cross-border data sharing.

The X-Road platform is easier to implement than many other existing technologies where secure interoperability is the goal, highlighting a key lesson: cross-border platforms should be light, lean and cost effective in order to reduce the need for significant resources. This is crucial as resource-intensive platforms can dissuade other actors from pursuing the same goal.

Ultimately, governments seeking to share information across borders to help them achieve their goals should focus on key foundations: building productive, trusted and effective relationships with and across governments that are looking to achieve better sharing of information and data, as well as individual governance, digital and data maturity. These challenges and opportunities are not specific to cross-border issues, but also impact broader innovation and collaboration. If done well, the potential for scalability and broader application of the X-Road Trust Federation is immense, and offers opportunities to provide more seamless, effective and efficient services for citizens.





# Adding a cross-border dimension to upskilling and capacity building

Developing new skills and capacities is one of the most critical aspects for governments as they seek to keep up with rapid societal changes and growing complexity and uncertainty. Last year, the World Government Summit found that “driving radical, inclusive upskilling at scale” is one of the most critical priorities for navigating the chaotic transition to a new world, both for the public sector and beyond (World Government Summit, 2021).

Public sector skills and capacities are foundational in supporting the ability to achieve change in a systemic way, and over the long term. This is recognised by all OECD countries and a number of others, through adherence to the 2019 Recommendation on Public Service Leadership and Capability,<sup>69</sup> which states that a professional, capable and responsive public service is a fundamental driver of citizens’ trust in public

institutions. Similarly, the OECD’s Good Practice Principles for International Regulatory Co-operation (OECD, 2021d) include recommendations to enable an IRC-conducive framework (i.e. raise awareness of IRC, build on existing platforms for co-operation, reduce anti-IRC biases and build-in incentives for policy makers and regulators).

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<sup>69</sup> See <https://oe.cd/pem-rec> An official OECD “Recommendation” is a legal instrument which, although not legally binding, is considered by member countries to carry great moral force. OECD Recommendations are adopted when member countries are prepared to make the political commitment necessary to implement the principles set out in the text. This type of instrument is often referred to as “soft law”.

Building on these instruments, the OECD has developed frameworks specifically designed to enhance the skills and capacities of modern public sectors, with the aim of ensuring they are sufficiently agile to meet the increasingly complex challenges facing governments and society at large. The broadest of these frameworks is Skills for a High Performing Civil Service (OECD, 2017), developed by the OECD Public Employment and Management Unit (PEM).<sup>70</sup> It identifies four types of skills essential to developing better policies and regulations, working effectively with citizens and service users, commissioning cost-effective service delivery and collaborating with stakeholders in networked settings:

- **Policy advice and analysis.** Public servants work with elected officials to inform policy development. New technologies, a growing body of policy-relevant research, and a diversity of citizen perspectives all demand new skills for effective and timely policy advice.
- **Service delivery and citizen engagement.** Public servants work directly with citizens and users of government services. New skills are required for civil servants to effectively engage with citizens, crowdsource ideas and co-create better services.
- **Commissioning and contracting.** Not all public services are delivered directly by public servants. Governments throughout the OECD are increasingly engaging with third parties for the delivery of services. This requires skills in designing, overseeing and

managing contractual arrangements with other organisations.

- **Managing networks.** Civil servants and governments are required to work across organisational boundaries to address complex challenges. This demands skills to convene, collaborate and develop shared understanding through communication, trust and mutual commitment.

As can be seen in the previous chapter, a modern and innovative public sector that can collaborate and innovate across borders demands the necessary skills to achieve successful digital transformation and digital innovation. To aid in this effort, the OECD Digital Government and Data Unit,<sup>71</sup> developed The OECD Framework for Digital Talent and Skills in the Public Sector (OECD, 2021g). This three-pillar framework stresses the importance of:

- **Building the right environment.** This requires leaders to communicate a clear vision, maintain awareness of critical digital skills, empower delivery teams, promote user-centricity and establish a learning culture.
- **Establishing the skills for digital government.** This necessitates a broad skills strategy, equipping public servants with digital user skills, and assembling diverse, multi-disciplinary and well-trained teams.
- **Creating a path to a digital workforce.** This demands proactive recruitment strategies, well-designed rewards systems and investment in digital talent, among others.

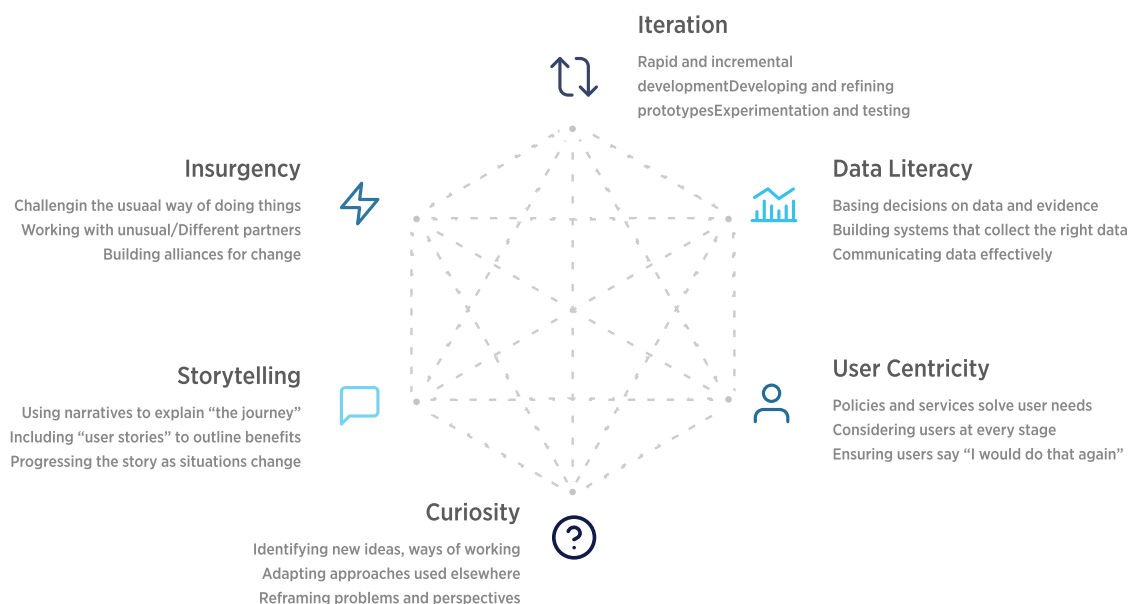
<sup>70</sup> In illustrating the importance of these skills and in setting out a vision of a future-ready public service that is forward-looking, flexible and fulfilling to a diverse range of public employees, the OECD in 2021 issued the first in a new annual series of reports on Public Employment and Management to help guide governments maximise the impact of their investments in public employees. (OECD, 2021f).

<sup>71</sup> [www.oecd.org/gov/digital-government/](https://www.oecd.org/gov/digital-government/).

In focusing on public sector innovation specifically, OPSI has developed a set of Core Skills for Public Sector Innovation (see Figure 16), which stress the need for innovation as part of the role of all public servants, and set forth a skills framework to underpin this goal. OPSI also issued a follow-up report on how to actualise these skills through human resources and leadership strategies (OECD, 2019d).

guidelines to make innovation an integral part of policy making and administration. It helps governments to understand, examine and map their innovation capacity, thereby enhancing evidence and understanding of enablers, barriers and opportunities to improve their capacity for innovation. It also supports governments' ability to quickly adapt to changing environments and build more robust and sustainable solutions.'

**Figure 16: Core Skills for Public Sector Innovation**



Source: <https://oe.cd/innovationskills>.

Tackling complex challenges across borders is not an easy task. The requisite capacity for innovation needs to be developed, strengthened and embedded as part of the broader functioning of governments. More specifically, this capacity must be integrated across all existing levels, functions and mechanisms of government – including regulatory policy, budgeting, audit, digitisation or human resource management, among others.

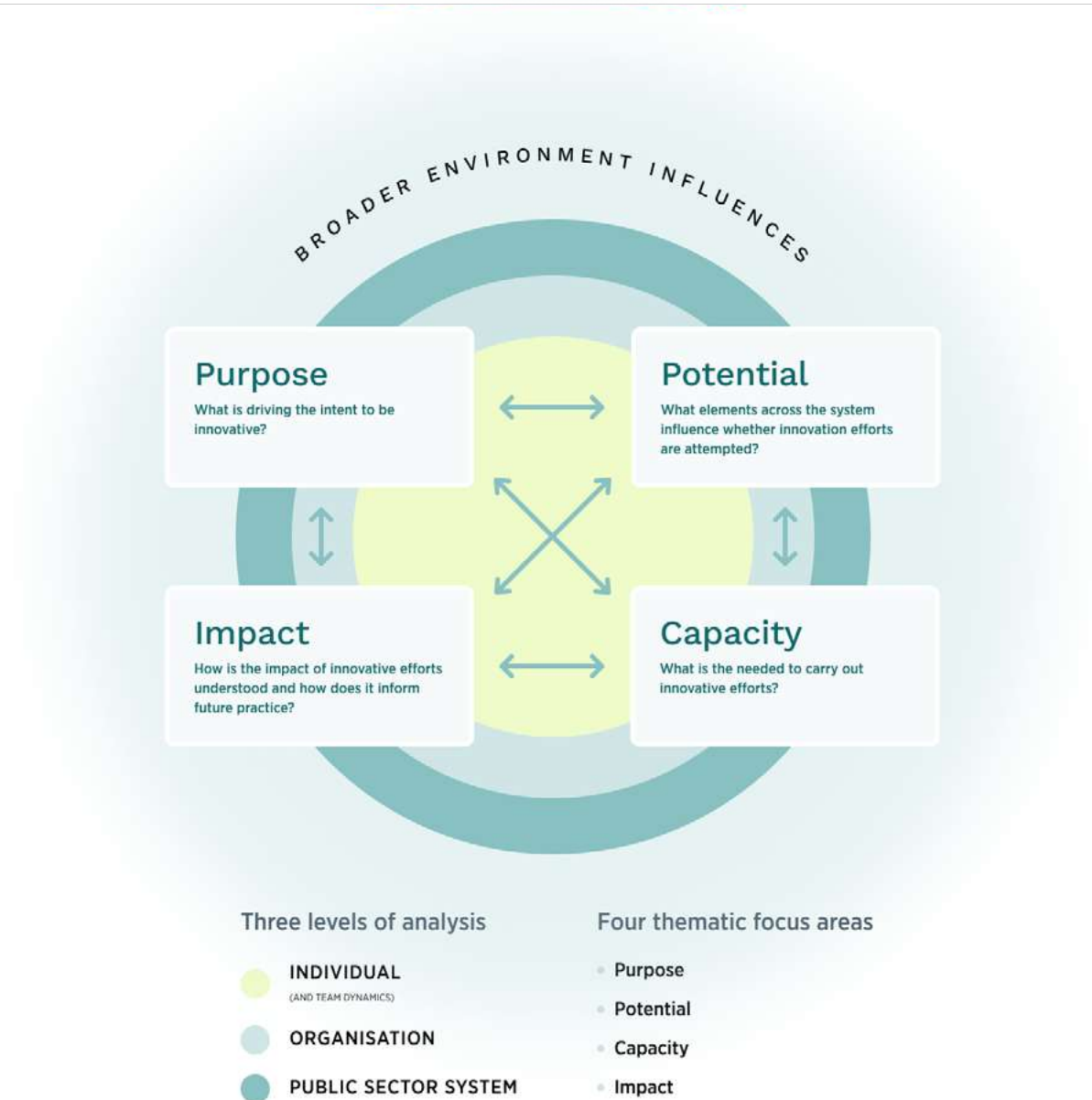
OPSI's Innovation Capacity Systemic Framework provides a practical and systemic framework and set of

The Framework takes a broad view of the systemic elements within the public sector, categorising them in terms of: the individual (including team dynamics), the organisational and the public sector system (including broader global and environmental influences). At each of these levels, the analysis is framed around four focus areas:

- **Purpose.** What is driving the intent to be innovative?
- **Potential.** What elements across the system influence whether innovation efforts are attempted?

- **Capacity.** What is needed to carry out innovative efforts?
- **Impact.** How is the impact of innovative efforts understood and how does it inform future practice?

Figure 17: Innovative Capacity of Public Sectors – framework



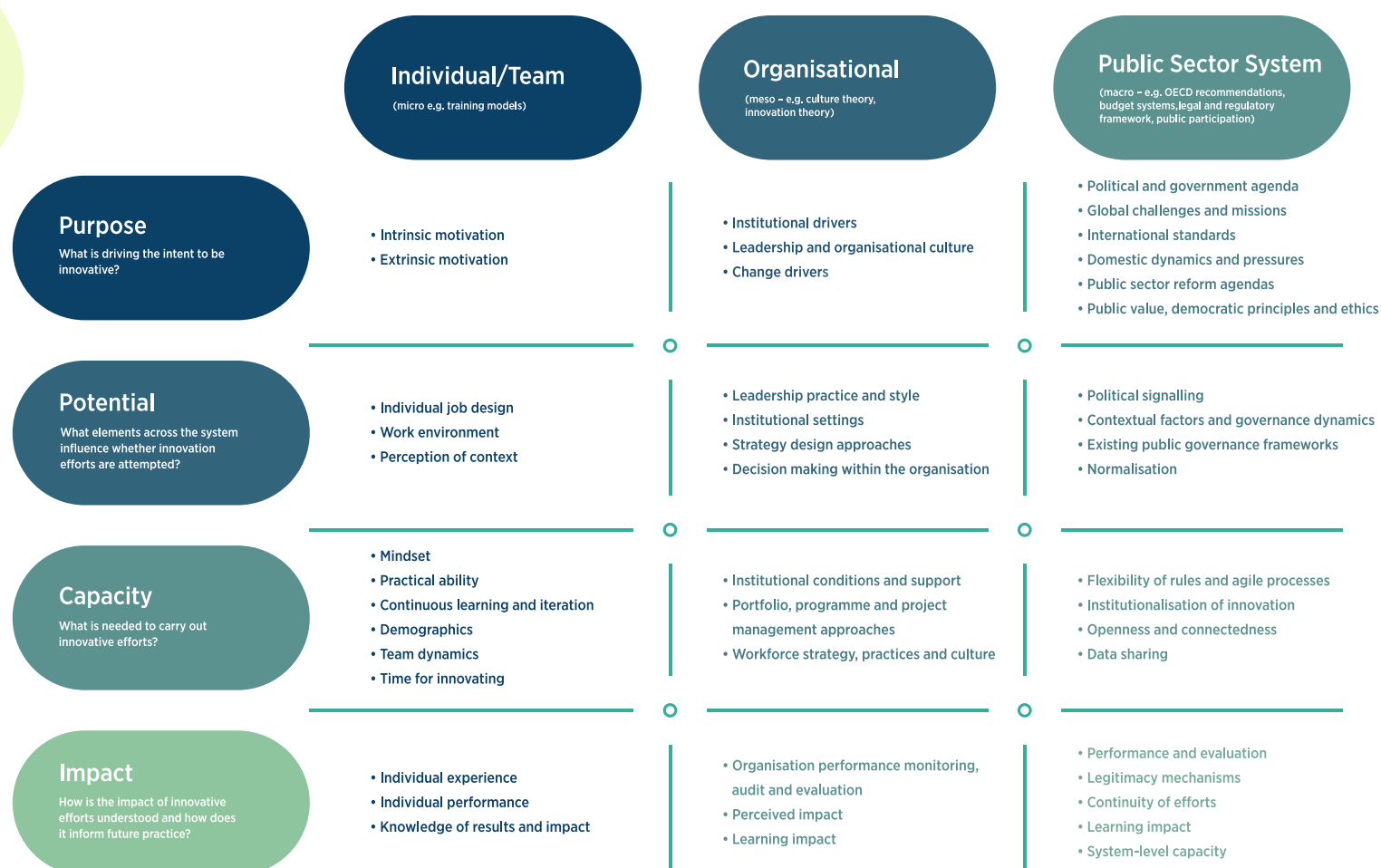
Source: OPSI.



Each focus area is tied to specific signals which allow users to examine and map the enablers and barriers of innovative capacity factors. Examples include the presence and clarity of complex missions or objectives, the explicit authority for innovation to achieve goals, networked or collaborative governance models, the extent to which governments are used to connecting across sectors or jurisdictions, or the use of iterative funding and evaluation models to support experimentation.

When countries attempt to achieve big public goals or address major challenges that require them to be more innovative (e.g. climate change, diversity and inclusion, efficiency), the Framework can be used to identify which thematic areas to address or tackle, and on what level, making it possible to design interventions that are tailored to specific country contexts.

Figure 18 Innovative Capacity Framework – thematic focus areas and levels of analysis



Individual governments have also developed their own upskilling frameworks and implementation activities, such as those detailed extensively in the 2020 report by OPSI and the MBRCGI on Upskilling and Investing in People.<sup>72</sup> Governmental partners in academia and civil

society have done their part as well, such as through the Australia and New Zealand School of Government (ANZSOG)'s Today's Problems, Yesterday's Toolkit,<sup>73</sup> which supports public sector innovation and entrepreneurship through skills and capacities

<sup>72</sup> <https://trends.oecd-opsi.org/trend-reports/upskilling-and-investing-in-people>.

<sup>73</sup> [www.anzsog.edu.au/resource-library/news-media/todays-problems-yesterdays-toolkit-public-service](http://www.anzsog.edu.au/resource-library/news-media/todays-problems-yesterdays-toolkit-public-service).

development, and Nesta's competency framework on skills, attitudes and behaviours for successful public problem solving.<sup>74</sup>

These frameworks play an important role in helping governments innovate and build capacities for more effective and responsive public sectors within their own contexts and with their own known ecosystems. Yet, despite OECD analysis dating back to 2013 recognising that “special governance capacities are needed for cross-border efforts, particularly to support innovation” (OECD, 2013a), such frameworks generally do not explicitly consider or account for building up skills and capacities for cross-border collaboration.

However, despite slow progress, the scarcity of best practices and frameworks in this area appears to be changing. As part of ongoing research, OPSI and the MBRCGI have identified some efforts to applying cross-border elements to skills and capacity building. Governments continue to equip themselves with the skills and capacities needed for achieving modern and innovative public sectors within a country, such as those imbued by the frameworks discussed above, and are also better positioning themselves to share and build skills in cross-border ways.

In particular, research by OPSI and the MBRCGI has uncovered two key ways in which upskilling and capacity building are taking shape in innovative ways across borders. First, new types of skills-transfer programmes are emerging that strengthen bonds among cross-border actors. These prioritise symbiotic transfers of skills and building cross-border cultures of learning. Second, and to a lesser extent, new frameworks and tools have been developed to help enhance skills and capacities specifically on the ability

to collaborate across borders. However, more efforts are needed in this area. The rest of this chapter discusses these developments.

## Innovative cross-border skills-sharing initiatives

The primary method adopted by governments to introduce a cross-border dimension to upskilling and capacity building is to take known skills and capacities present among one or more cross-border partners and work to introduce and diffuse them among others. Such efforts range from “technical support” initiatives where one partner lends a helping hand to another, to targeted initiatives focused on enhancing skillsets and capacities in a broader sense.

A notable example of initiatives geared towards skills sharing through technical support is b-solutions.<sup>75</sup> This initiative helps European border regions overcome obstacles hindering cross-border interactions by providing cross-border actors with legal experts to identify root causes of obstacles and to devise solutions. Public sector organisations can apply for assistance by submitting information on an identified obstacle. To date, 90 different obstacles have been selected covering 27 border regions in 21 EU member states in the areas of employment, public transport and healthcare, among others.

A number of other examples begin with technical support, but also aim more explicitly to enhance innovation capacities among partners across borders, which can help ensure the long-term sustainability of efforts. These include the following:

<sup>74</sup> [www.nesta.org.uk/blog/what-are-skills-and-attitudes-successful-public-problem-solving](http://www.nesta.org.uk/blog/what-are-skills-and-attitudes-successful-public-problem-solving).

<sup>75</sup> See <https://oe.cd/b-solutions> and [www.b-solutionsproject.com](http://www.b-solutionsproject.com).

- **The West African Health Informatics Team (WAHIT)**<sup>76</sup> touched on in an earlier report on Governing Cross-Border Challenges,<sup>77</sup> is based at the West African Health Organisation (WAHO) and serves as a team of software developers and information system experts that provide on-demand technical assistance to countries in the region. As part of these efforts, WAHIT also seeks to build regional capacities and has accordingly trained over 250 systems experts in West Africa through 26 country missions.
- **Innovacion Publica 360**<sup>78</sup> an initiative of political innovation organisation Asuntos del Sur, promotes collaboration and provides technical support to sub-national governments across Argentina, Bolivia, Colombia and Mexico. It aims to address innovation skills gaps at the sub-national level, with a focus on public challenges prevalent in Latin America, such as transparency and trust in democracy and institutions. Innovacion Publica 360 builds capacities for channelling collective intelligence in order to achieve inclusive and democratic governance. Activities delivered so far include training innovation agents, designing and facilitating citizen labs and advising on public policy. Lessons are then scaled up through a regional learning community of public innovators.
- **Local Governments for Sustainability (ICLEI) Cohorts**<sup>79</sup> a non-profit organisation active in more than 100 countries, offers multi-month structured technical assistance training for local communities. The training serves as a cost-effective alternative to project

outsourcing and focuses on building local public capacity. Regional collaborations and cohort training are offered for groups of up to 20 cities that come together to learn from and support each other on topics such as climate change action planning.<sup>80</sup>

- **Innovation Boot Camp for Public Sector Leaders**, led by the governments of Estonia and Finland, has brought leaders from both countries together to develop their innovation capacity. The results of the programme encouraged the creation of a new programme concept for an international target group, in which top executives of central government from four countries are invited to participate (OECD, 2017).
- **The UAE Government Experience Exchange Programme (GEEP)** is a development and modernisation programme offered by the UAE to governments around the world. A full case study on the GEEP is provided at the end of this chapter.
- **Ynnovate**<sup>81</sup> is a Dutch civil society organisation that supports public sector innovation by providing government employees with new tools. Participants from different countries, jurisdictions and levels of government interact through a network that enables them to connect and collaborate. These “Ynnovators” are trained using the “Ynnovate Method” to structure their work and to organise sharing across borders.

<sup>76</sup> See <https://oe.cd/wahit> and [www.healthpolicyplus.com/WAHIT.cfm](http://www.healthpolicyplus.com/WAHIT.cfm).

<sup>77</sup> <https://oe.cd/cross-border-governance>.

<sup>78</sup> See <https://innova360.asuntosdelsur.org> and <https://oecd-opsi.org/innovations/innovacion-publica-360>.

<sup>79</sup> <https://icleiusa.org/about-cohorts>.

<sup>80</sup> [www.c40knowledgehub.org/s/article/Better-together-How-cities-can-collaborate-for-faster-more-effective-climate-action](http://www.c40knowledgehub.org/s/article/Better-together-How-cities-can-collaborate-for-faster-more-effective-climate-action)

<sup>81</sup> <https://letsynnovate.com/>.

At first glance, it may seem that the benefits of these arrangements are disproportionate, with the receiving governments gaining more than those who seek to share. However, OPSI and MBRCGI research shows that such efforts pay dividends for all participants. The GEEP provides an excellent example of this dynamic, as discussed in the case study. Partner countries benefit by learning new public sector innovation skills, while the UAE benefits by learning about new approaches in other countries that can be used to inform their own innovation models and frameworks. Additional lessons learned are generated on the basis of UAE-originated efforts employed by others.

While these efforts do not specifically target the skills and capacities necessary to conduct cross-border collaboration and innovation, such processes implicitly strengthen these capacities, as has been demonstrated in a variety of areas, such as OECD work on International Regulatory Co-operation (OECD, 2021d). To learn how to operate in cross-border environments, public officials need to be exposed to different cultures and different ways of interacting, which these efforts help to achieve. Skillsets specific to innovation can also arise, as public officials successfully working on a cross-border basis often need to make use of creativity to make cross-border collaboration happen (OECD, 2013a), which also helps enhance their capacity for innovation. Participants can also make personal contacts and build relationships, which can promote faster transfer of knowledge and relevant information. Such benefits are similar to those discussed in the “Innovative networks tackling cross-border collaboration” chapter of the first report in this series on Governing Cross-Border Challenges. These types of experiences can “evolve into pooled skill sets” to enhance both collaboration and innovation (Moonen et al., 2020).

## **More efforts are needed to instil skills and capacities for cross-border collaboration**

Understanding how to engage in cross-border processes implies a strong learning curve. Even governments with mature agendas for being open, digital and innovative need to build up new capacities on cross-border elements to effectively innovate across jurisdictions.

OECD work has found that cross-border innovation has two layers of complexity, one for supporting innovation and the other for supporting work across borders (OECD, 2013a). The previous sections in this chapter have shown that a number of frameworks and initiatives have been developed to support innovation, including in cross-border ways. Many of the identified skills are also relevant for supporting cross-border government innovation, even if this is not articulated as their intended purpose (see Table 1).



Table 1: Examples of frameworks supporting skills relevant to cross-border government innovation

Framework	Example of relevant skill(s)
<b>OECD Skills for a High-Performing Civil Service</b>	<ul style="list-style-type: none"> <li>• Policy advice and analysis: considering diverse perspectives.</li> <li>• Service delivery and citizen engagement: engagement, crowdsourcing and co-creation.</li> <li>• Managing networks: working across boundaries to address complex challenges and build trust and legitimacy, including through strengthening interpersonal skills (e.g. coaching, mediation, negotiation, facilitation, diplomacy), building consensus and creative/joint problem solving.</li> </ul>
<b>OECD Framework for Digital Talent and Skills in the Public Sector</b>	<ul style="list-style-type: none"> <li>• Diplomacy: an individual's ability to build relationships, understand those around them and create consensus, including through seeking out opposing points of view, creating boundary-crossing networks, fostering empathy and emotional intelligence, and negotiating to understand and smooth out differences among diverging viewpoints.</li> </ul>
<b>OPSI Core Skills for Public Sector Innovation</b>	<ul style="list-style-type: none"> <li>• Curiosity: seeking out new ideas and continuously learning.</li> <li>• Storytelling: using narratives to teach lessons.</li> <li>• Insurgency: working with unusual partners.</li> </ul>
<b>OPSI Anticipatory Innovation Governance</b>	<ul style="list-style-type: none"> <li>• Understanding possible futures to chart present-day actions to shape them.</li> <li>• Absorbing complexity.</li> <li>• Fostering innovation ecosystems through 1) orchestrating collaboration (not imposing it); 2) meeting potential ecosystem partners on their terms); and 3) building trust and pursuing flexible, evidence-based adaptation.</li> <li>• Considering and enabling relevant mechanisms for change (e.g. vested interests, participation, networks and partnerships, legitimacy, alternatives exploration, experimentation, sense-making, institutional structures).</li> </ul>

<b>OPSI Systems Approaches</b>	<ul style="list-style-type: none"> <li>• Understanding and mapping ecosystems and key players.</li> <li>• Considering holistic problems that cross administrative and territorial boundaries.</li> </ul>
<b>ANZSOG Public Sector Innovation Skills</b>	<ul style="list-style-type: none"> <li>• Defining problems collaboratively.</li> <li>• Participatory design.</li> <li>• Collaboration.</li> <li>• Public entrepreneurship: building up people or teams who are willing and have the ability to deliver solutions with great impact, and disseminate them in a systematic manner. Overcoming the ambiguity and uncertainty that characterises complex problem-solving.</li> </ul>
<b>Nesta Skills and Attitudes for Successful Problem Solving</b>	<ul style="list-style-type: none"> <li>• Working together: involving stakeholders and unusual suspects, creative facilitation, building bridges and brokering.</li> <li>• Accelerated learning, including systems thinking to comprehend complexity.</li> <li>• Leading change: making change happen in different political, social and economic environments.</li> </ul>

However, OPSI and the MBRCGI have uncovered only a few efforts designed to help build up the foundational and cross-cutting skills and capacities needed to maximise the potential for successful cross-border work. The United Kingdom's civil service is one of the few that has taken steps to outline the global competencies that its policy professionals should aspire to develop. Published in November 2021, the Policy Profession Standards set out expectations regarding the skills and knowledge in 12 areas, including "working internationally".<sup>82</sup> The specific skills and knowledge in this section include the following, which are further broken down into discreet elements across three levels of expertise (developing, practitioner and expert):

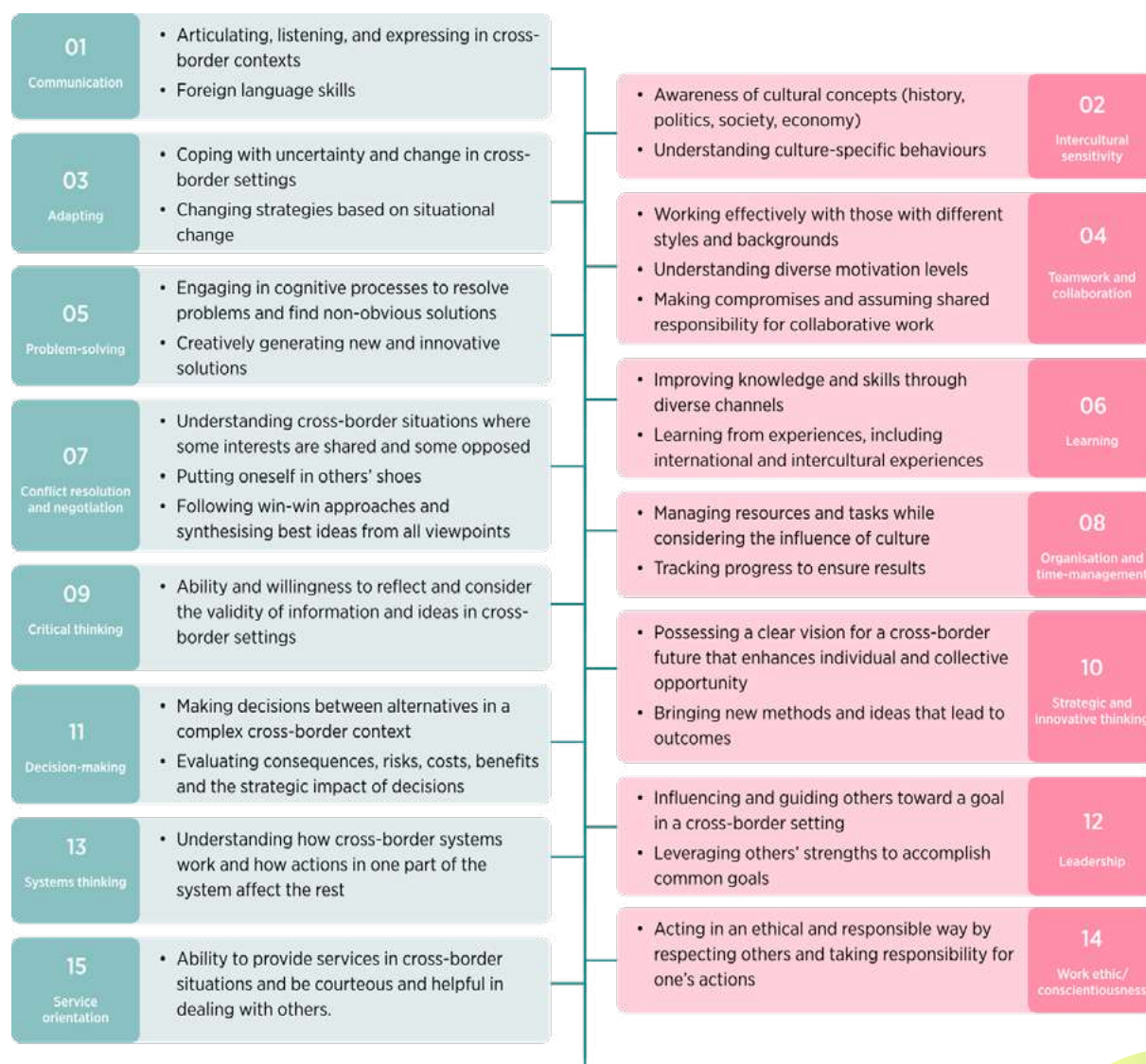
- Understanding the international context and the priorities and interests of all parts of the UK.
- Work within complex contexts to build relationships, influence and negotiate to advance UK interests.
- Work effectively with international bodies (multilateral).
- Understand the role of international development work.
- Understand international trade implications for policy areas.

<sup>82</sup> <https://bit.ly/3M57VIC>.

Embedded within this list are a range of technical, social and behavioural skills and competencies that are required for effectively managing global issues, such as being aware of the interlinkages between policy areas and international dynamics, working through global networks, cross-cultural communication, considering the global and local context in international policy development, and working with ambiguity, uncertainty and contrasting perspectives, among other relevant skills and behaviours.

**At a transnational level**, a core effort identified is the European Cross-Border Skills Framework (ECBS Framework), which is composed of 15 skills that have been identified and defined within the framework (see Figure 19).

**Figure 19: European Cross-Border Skills Framework**



Source: OPSI based on <https://european-crossborder-skills.eu/en/cross-border-skills-framework.html>.

Individuals can document their skills on a corresponding ECBS Platform<sup>83</sup> and earn badges and certificates in one or more of the Framework's skills upon submitting documentation that is evaluated by a local committee of experts. At present, the ECBS Framework is being used at a handful of European universities in border regions where the first set of certifications will soon be awarded to participating students and staff. However, project leads at the Université de Pau et des Pays de l'Adour in France envision a future in which other actors, including public servants, such as those working in public sector organisations along borders, can seek certification on the skills they have developed. While current efforts focus on valorising skills gained based on experience, OPSI and the MBRCGI also see the potential for such a framework to eventually be used to develop training and experience-oriented programmes on the front end.

In addition, several resources have been developed that map specific skills against certain aspects of cross-border innovation or collaboration more broadly, while also providing practical guidance on how to achieve them. These resources are less cross-cutting than the ECBS Framework, but they are helpful in zooming in on specific skills and arming practitioners with a blueprint on how to attain them. A leading example is the COE's Centre of Expertise for Local Government Reform, which has developed a "Leadership for Cross-Border Cooperation" toolkit<sup>84</sup> to help guide cross-border practitioners and trainers. It includes chapters on:

- **Understanding cross-border co-operation**, which integrates essential knowledge and tools for entering into a cross-border effort.
- **Becoming a cross-border co-operation promotor** through developing cross-border leadership skills and building relationships with cross-border actors.
- **Mapping obstacles to find solutions** focusing on peer-to-peer approaches for identifying and understanding obstacles and developing replicable solutions to overcome them.
- **Knowing your stakeholders** through mapping and categorising stakeholders to allow for sustainable engagement based on their interests and capacities.
- **Engaging your community** throughout the lifecycle of cross-border initiatives.
- **Common Toolkit for Inter-Cultural/Cross-Border Project Management.**<sup>85</sup> Created by the Transfrontier Euro-Institute Network (TEIN), it features six learning modules that each deal with an aspect of cross-border project implementation. It includes information on inter-cultural management principles, which are essential for cross-border projects (e.g. the type of management in which people from various cultures understand one another in the same manner).
- **Three toolkits developed by The Centre for Cross Border Studies.** These consist of an Impact Assessment Toolkit for Cross-Border Cooperation,<sup>86</sup> a Toolkit for Budgeting of Cross-Border Projects<sup>87</sup> and a Toolkit for Evaluation of Cross-Border

<sup>83</sup> <https://app.european-crossborder-skills.eu>.

<sup>84</sup> <https://rm.coe.int/lap-cbc-leadership-for-cross-border-cooperation-toolkit-for-practition/1680759f11>.

<sup>85</sup> <https://transfrontier.eu/tools/pat-tein-toolkit-for-inter-cultural-cross-border-project-management>.

<sup>86</sup> [www.crossborder.ie/pubs/2011-IAToolkit.pdf](http://www.crossborder.ie/pubs/2011-IAToolkit.pdf).

<sup>87</sup> [www.crossborder.ie/site2015/wp-content/uploads/Toolkit-for-Budgeting-of-Cross-Border-Projects.pdf](http://www.crossborder.ie/site2015/wp-content/uploads/Toolkit-for-Budgeting-of-Cross-Border-Projects.pdf).

Projects.<sup>88</sup> These resources focus on promoting post-implementation capacities, whereas a number of other resources are geared more towards design and governance capacities.

The OPSI and MBRCGI research findings emphasise the importance of the skills contained in the ECBS Framework and other resources listed here. While many of the skills outlined are similar to those in the other aforementioned frameworks, a major distinction is that they are all viewed through the lens of cross-border settings and context, with an emphasis on issues such as widening cultural perspectives, balancing motivations and objectives among diverse partners, and development of the socio-emotional and diplomatic skills necessary to pursue innovation projects across jurisdictions.

Woven within and across these skills is the need for governments to support public servants in becoming “boundary spanners”. Such individuals have the ability to advance innovation by navigating boundaries and siloes within and across government, as well as with other sectors (Dickinson et al., 2019), and by extension, across borders. Such activities assume increasing importance as the challenges governments face grow in terms of volume and complexity, exceeding the capabilities of traditional government structures and borders (van Meerkkerk and Edelenbos, 2018). Boundary spanners have the capability to identify gaps in knowledge, skills and abilities, and work across structures to fill them through communication, collaboration and building trust (Torfing, 2019).

In general, there is little systemic knowledge on boundary spanning in government (van Meerkkerk and Edelenbos, 2018). Some of the strongest work in this field has developed by Paul Williams (2012), who mapped the functioning of boundary spanners in public networks, and identified four roles, each with its own competencies (see Table 2).

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<sup>88</sup> [www.crossborder.ie/site2015/wp-content/uploads/Toolkit-for-Evaluation-of-Cross-Border-Projects.pdf](http://www.crossborder.ie/site2015/wp-content/uploads/Toolkit-for-Evaluation-of-Cross-Border-Projects.pdf).



**Table 2. The role and competencies of boundary spanners in public administration**

Role	Activities	Main competencies
Reticulist	Informational intermediary, gatekeeper, entrepreneur of power	Networking, political sensitivity, diplomacy, bargaining, negotiation, persuasion
Interpreter/ Communicator	Culture breaker, frame articulator	Interpersonal, listening, empathising, communication, sensemaking, trust building, conflict management
Co-ordinator	Liaison person, organiser	Planning, co-ordination, servicing, administration, information management, monitoring, communication
Entrepreneur	Initiator, broker, catalyst	Brokering, innovation, whole systems thinking, flexibility, lateral thinking, opportunistic

Source: OECD (2017); Williams (2012).

The second report in this series on Surfacing Insights and Experimenting Across Borders<sup>89</sup> recommended that governments “formalise the role of and build competencies for cross-border innovation facilitators”. By developing learning programmes targeted at enhancing competencies for situations where cross-border skills intersect with boundary spanning roles and capacities, governments could be in a better position to structure and develop these cross-border facilitator roles. Tailored learning programmes based on the role and level of involvement can also benefit other public actors in the cross-border ecosystem.

While only a few skills frameworks exist, there are a number of other practical resources available that can help facilitators and other public actors seeking to affect cross-border change.<sup>90</sup> For instance, the Council of Europe (COE) has also developed the “E-Database Empowering Networks”,<sup>91</sup> an online toolkit for Cross-Border Cooperation. It serves to help policy makers learn from best practices on cross-border collaboration across Europe encompassing topics such as institutional co-operation, educating and training, environment, health and crisis management. As an additional aide, the Association of European Border Regions (AEBR)

<sup>89</sup> <https://cross-border.oecd-opsi.org/reports/surfacing-insights-and-experimenting-across-borders>.

<sup>90</sup> Other targeted examples have been discussed in previous reports in this series, including the Open European Dialogue (OED)’s guidance on design sprints (report 1), and ecosystem mapping resources from the World Bank, GIZ and researchers at the University of Luxembourg (report 2). OPSI’s Toolkit Navigator also includes resources for a number of relevant topics, such as participatory design, systems change, facilitation and c-design.

<sup>91</sup> <http://cbc.isig.it>.

has created an annual “cross-border school”,<sup>92</sup> an event where academics and practitioners can come together to discuss how cross-border co-operation can add value, while also taking into account the most pressing challenges at the time (e.g. COVID-19 in 2020, energy sustainability and greening in 2021).

In general, despite its importance, few frameworks and practical resources exist to help governments and practitioners strengthen and use the skills needed for cross-border government innovation, and cross-border collaboration more broadly. Importantly, the vast majority of items uncovered by OPSI and the MBRCGI are oriented towards European dynamics and systems. While many aspects of items developed for European audiences are likely able to be applied elsewhere, the lack of consideration for any resources developed by non-European audiences can limit their value and the willingness of others to apply them. In addition, while some frameworks and resources have been created, OPSI and the MBRCGI found little evidence of governments proactively implementing them through learning programmes or other efforts dedicated to enhancing skills for cross-border collaboration and innovation.<sup>93</sup>

Without strong cross-border capacities, governments may struggle to get off the ground the types of innovative efforts discussed earlier in this report and in the two previous reports in this series<sup>94</sup> – or to sustain them over the long term.

The increasing prevalence and importance of cross-border efforts does not yet appear to be matched by initiatives investing in the capacities necessary to maximise their potential. OPSI and the MBRCGI see this as an area of major opportunity.

<sup>92</sup> <https://www.aebr.eu/initiatives/cross-border-school-aebr>.

<sup>93</sup> For instance, one of the only identified examples was the Centre for Cross-Border Studies training of public officials from Northern Ireland and the Republic of Ireland (<https://bit.ly/3IdOs5S>).

<sup>94</sup> See <https://trends.oecd-opsi.org> for the full series of reports.



# The Government Experience Exchange Programme

## United Arab Emirates

The Government Experience Exchange Programme (GEEP)<sup>95</sup> is a development and modernisation programme offered by the United Arab Emirates (UAE) to governments around the world that aims to create a unified global model for the development of government administration, by exchanging best and successful practices among the world's governments. The purpose of the programme is to share knowledge, skills and experience with a view to building innovation and excellence capacities, including innovation in the public sector, as well as training programmes for communities and students. The GEEP team works together with the partner countries to design, develop and deliver customised initiatives along different workstreams that align with their policy priorities and offer them long-term value. In doing so, both the UAE and partner countries can learn from each other in ways that can help them achieve their respective goals and priorities. As well as individual governments, the GEEP is offered to networks of countries mediated by international bodies, such as the United Nations or African Union.

<sup>95</sup> <https://www.governmentexchange.gov.ae>.

## Context

The UAE's government strategy, Vision 2021, is a long-term development and modernisation programme, part of which aims to strengthen the country's role as a global hub for innovation. The establishment of the Mohammed bin Rashid Centre for Government Innovation (MBRCGI) – the co-authors of this report series with OPSI – offers just one example of the UAE's efforts towards this long-term strategy.<sup>96</sup> These efforts have proven successful: the UAE ranked 33rd globally and 1st in the MENA region in the Global Innovation Index 2021.<sup>97</sup> Given this success, the UAE took the decision to share its knowledge and learning with other countries.

## An innovative solution

The GEEP is an Emirati initiative that began in 2018 during the World Government Summit, with the signing of a strategic partnership between UAE and the Arab Republic of Egypt. Located within the UAE government's Ministry of Cabinet Affairs, the GEEP is a cross-border development and modernisation programme offered by experts from the UAE government to support innovation capacity building with governments around the world. The programme is built on three pillars that attempt to ensure the effective development of government innovation capacities:

1. Leveraging national innovation competencies built up in the UAE.
2. Taking leading government practices from UAE and sharing them beyond its borders.
3. Building a global knowledge network with partner countries.

The GEEP's purpose is to create customised skills-based solutions that cultivate long-term value for partner countries and that can be subsequently scaled by that country. To this end, the UAE-led programme offers several different development and modernisation solutions that can be tailored to the needs of each partner country, including government accelerators (see coverage of the UAE's Government Accelerators programme in Box 3 of the second report in this series),<sup>98</sup> coding or programming initiatives (e.g. the One Million Arab Coders initiative),<sup>99</sup> and foresight activities (e.g. Future Foresight efforts),<sup>100</sup> government performance, government services and smart services, government innovation, economy, tourism, government quality and excellence, entrepreneurship, education and many others (100+ workstreams).

The lifecycle of a typical GEEP project ensures that partner countries are not only involved in setting priorities, but also are equipped to scale up and carry the initiatives forward on their own. In general, partnerships start in one of three ways: 1) senior leadership interest from both the UAE and the potential partner country, 2) interest raised through diplomatic

<sup>96</sup> <https://www.mbrcgi.gov.ae/en>.

<sup>97</sup> [https://www.wipo.int/edocs/pubdocs/en/wipo\\_pub\\_gii\\_2021.pdf](https://www.wipo.int/edocs/pubdocs/en/wipo_pub_gii_2021.pdf).

<sup>98</sup> <https://cross-border.oecd-opsi.org/reports/surfacing-insights-and-experimenting-across-borders/>.

<sup>99</sup> <https://www.udacity.com/mena/one-million-arab-coders>.

<sup>100</sup> See <https://wam.ae/ar/details/1395302812579>, <https://www.albayan.ae/across-the-uae/news-and-reports/2019-12-25-1.3735974>, <https://www.albayan.ae/across-the-uae/news-and-reports/2019-09-23-1.3655569>, and <https://www.albayan.ae/across-the-uae/news-and-reports/2019-12-23-1.3734100>.

channels, or 3) countries inquiring about GEEP after hearing about it through media coverage. Once a partner country expresses an interest in joining the GEEP, the two countries hold high-level discussions and sign a partnership agreement. This agreement outlines priority areas and national direction from each government from different spheres of work including excellence, economic and entrepreneurship initiatives, among many others.

The areas of co-operation (i.e. workstreams) offered by the GEEP are vast, and include best practices from various sectors in the UAE and across the government on the local and federal level and the private sector. All areas of co-operation aim to exchange best practices with countries across the globe. Each workstream is designed to deliver the desired results of the other government. The UAE and partner countries work

to identify priority workstreams and areas for capacity building that align with both the partner country's national strategy and the skills and capacities that the UAE can support. The GEEP team, which comprises UAE civil servants and experts, proceeds to take this high-level buy-in and work with the UAE government's technical teams to build a set of tailored initiatives to tackle a specific goal and deliver a desired outcome around the pre-defined priority areas. What is more, task forces – composed of both UAE experts and public sector officials from partner countries – are responsible for the implementation of these initiatives and joint projects, meaning both governments work together as partners.

**Figure 20: UAE and Uzbekistan sign a strategic partnership in April 2019**



Source: <https://www.businesswire.com/news/home/20190603005398/en/UAE-Uzbekistan-Identify-Practical-Steps-to-Implement-Government-Modernization-Program>.



Each country engagement spans about three years, but can be expanded based on the interest of the partner country. Over time, responsibility for capacity building and management of the projects and initiatives shifts from the UAE to the partner country. Throughout the first year, 100% of the responsibility falls on the UAE, which shares its knowledge and experience; in the second year, the two governments share responsibility evenly; and in the final year, the partner country takes on 80% of the responsibility and effectively takes the lead in implementing the various skills-based activities. This gradual phasing out of UAE influence and phasing in of partner country agency increases the likelihood that these initiatives are carried forward once the GEEP officially ends. This does not necessarily signal the end of engagement between the two countries, however, as a number of countries participating in the GEEP have signed an agreement to extend co-operation after successful implementation of the current workstreams. UAE's work with Uzbekistan through the Government Experience Exchange Programme offers a good example of how a typical country engagement takes shape. In April 2019, the two countries signed a three-year partnership agreement, ensuring the buy-in of senior leaders from the outset. The Uzbek government, represented by Deputy Prime Minister Aziz Abdukhakimov, used the country's long-term strategy, entitled "Uzbekistan 2030", to prioritise 26 workstreams, including government services, government accelerators, programming (e.g. One Million Uzbek Coders)<sup>101</sup> and future foresight activities, among others. Working with its technical teams, the UAE GEEP team developed tailored training programmes aligned with these priority areas. A prominent example is the One Million Coders Initiative.

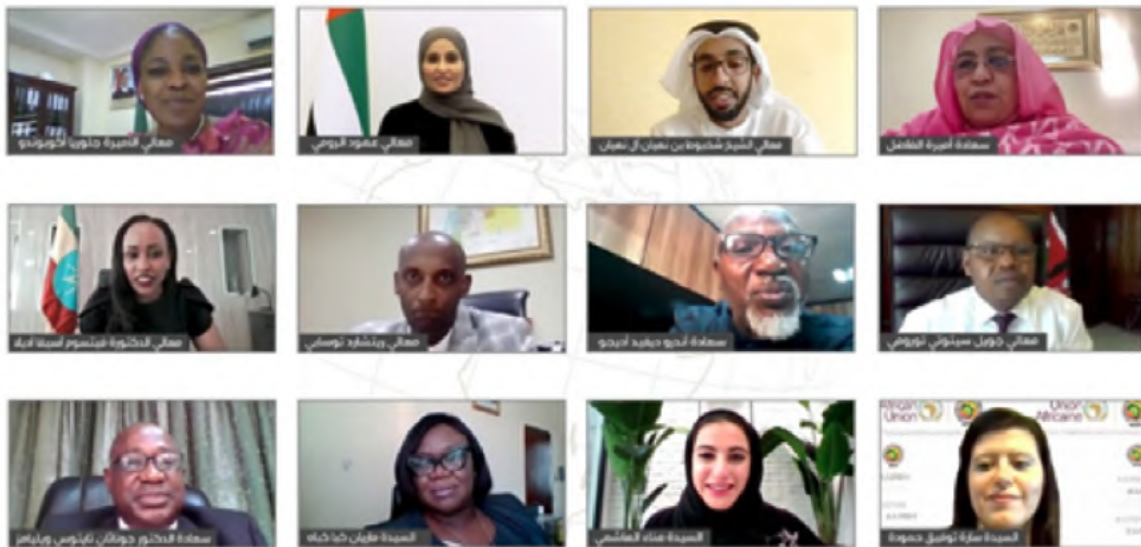
Originally developed in 2017, the initiative was adapted and tailored to the Uzbek context to meet its needs. The aim of the initiative is to empower citizens by teaching them how to code, consequently creating new high-skilled workers and job opportunities in the partner country. The platform offers high-quality free online courses and certifications from universally recognised companies, including Udacity and Microsoft. Another example is the UAE-Africa Government Experience Exchange Programme. Initiated in March 2021, the UAE launched a partnership with the United Nations Development Programme (UNDP) and the African Union's African Peer Review Mechanism, a voluntary arrangement among African states to review governance structures. The purpose of the programme is for the UAE to build strong relationships among a network of African states with a view to helping them develop their innovation skills and capacities. Nine countries – Angola, Botswana, Ethiopia, Ghana, Kenya, Nigeria, Rwanda, Sierra Leone and South Africa – agreed to use Agenda 2030 and the Sustainable Development Goals (SDGs) and the African Union's Agenda 2063 as international policy frameworks to guide the prioritisation of the UAE-led training programmes. This initiative highlights an important additional feature of the GEEP, namely its ability to create networks of users through which initiatives and learning can then be shared and scaled. These cross-border relationships and initiatives are expected to be built upon over the coming months.

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<sup>101</sup> <https://uzbekcoders.uz>.



Figure 21: A working session from the UAE-Africa Government Experience Exchange Programme



Source: <https://wam.ae/en/details/1395302919932>.

The GEEP team emphasised to OPSI and the MBRCGI that the relationships developed through the programme are collaborative partnerships, meaning benefits exist to both sides. The partner countries benefit by exchanging insights and experience in building public sector innovation skills and capabilities, allowing them to modernise their own government processes. The UAE's objectives for government modernisation and knowledge exchange are to:

- Contribute to creating and anticipating the future of government work in co-operation with all countries around the world for the good of humanity, and at the service of the people.
- Share the UAE's experience in government administration models with all countries around the world.
- Build strategic partnerships and share knowledge to support the international community and enhance opportunities for development, excellence and achievement

Since the GEEP was launched in 2018, 11 individual countries from five different continents – Colombia, Costa Rica, Egypt, Greece, Iraq, Jordan, Kyrgyzstan, Senegal, Spain, Sudan and Uzbekistan – have signed partnership agreements with the UAE, in addition to the UAE-Africa programme discussed above. GEEP efforts are continuously expanding across the globe in the hope of continuing the march of development, towards greater achievements, and the exchange of knowledge and experience.

## Novelty

This is the first known programme from a national government to focus on cross-border knowledge and skills transfer around public sector and community innovation. Its novelty also lies in its intrinsic focus on developing innovative skills-based solutions that create lasting value for its government users. First, partner countries are in the driving seat when it comes to defining priorities and setting targets that align with

their existing visions and policy frameworks. In the UAE-Africa programme, the alignment of education priorities with the UN SDGs and the African Union Agenda 2063 – both of which are international frameworks that provide shared policy directions – offers a good example. Second, by working closely with the partner countries as well as with UAE-based technical teams, the training programmes become highly tailored and customised to the context and needs of the partner countries. The way in which the One Million Coders initiative was adapted to Uzbekistan's priorities shows how existing solutions can be deployed to create new forms of value and impact in different contexts. Finally, the GEEP team stresses that the governments with which they work are not clients, but partners with whom agency is shared. Indeed, sharing working groups and shifting responsibility over the three-year programmes enables the partner countries to take ownership over the skills-based solutions offered in the programme.

## Impact and potential

GEEP efforts have had a positive impact on public sector innovation capacity building within government in partner countries and in the UAE. Examples of achievements include:

- Successful implementation of the Government Accelerators methodology in Uzbekistan<sup>102</sup> and Jordan,<sup>103</sup> and the opening of Government Accelerators centres in both countries.
- The adoption of a Government Excellence Model in Egypt.<sup>104</sup>
- The successful delivery of a capacity-building programme for public servants in Colombia, Costa Rica, Egypt, Greece, Iraq, Jordan, Kyrgyzstan, Senegal and Uzbekistan.<sup>105</sup>
- The launch of a Young Leader Programme in Uzbekistan.<sup>106</sup>

The impact of the GEEP extends beyond the primary users of its programmes, namely government and public sector agencies. Some programmes seek to involve other stakeholders. For the GEEP's programme with Jordan, for example, the Mobile Government Services Award, launched in both Jordan and Uzbekistan, tasked students to develop ideas to transform government digital services, and winners were awarded the opportunity to work together with digital agencies to implement those ideas.<sup>107</sup> This effectively created a bridge of co-operation between students and governments in solving challenges facing governments and their citizens. By reinterpreting and opening the skills-based programme to a host of young stakeholders, the programme in Jordan has grown by 400% in terms of active participants.

<sup>102</sup> See [www.mofaic.gov.ae/en/mediahub/news/2021/6/18/18-06-2021-uae-uzbekistan](http://www.mofaic.gov.ae/en/mediahub/news/2021/6/18/18-06-2021-uae-uzbekistan).

<sup>103</sup> See [www.albayan.ae/across-the-uae/news-and-reports/2020-01-29-1.3764266](http://www.albayan.ae/across-the-uae/news-and-reports/2020-01-29-1.3764266).

<sup>104</sup> See [www.skgep.gov.ae/en/media/news/winners-of-egypt-government-excellence-award-announced-in-partnership-with-uae](http://www.skgep.gov.ae/en/media/news/winners-of-egypt-government-excellence-award-announced-in-partnership-with-uae).

<sup>105</sup> See [www.albayan.ae/uae/news/2021-04-25-1.4149704](http://www.albayan.ae/uae/news/2021-04-25-1.4149704).

<sup>106</sup> [www.uzdaily.uz/en/post/70110](http://www.uzdaily.uz/en/post/70110).

<sup>107</sup> See the launch and award ceremony in Jordan (<http://wam.ae/ar/details/1395302755927> and [www.jordantimes.com/news/local/winners-crown-prince-award-best-govt-service-application-announced](http://www.jordantimes.com/news/local/winners-crown-prince-award-best-govt-service-application-announced), respectively), and Uzbekistan (see [www.albayan.ae/across-the-uae/news-and-reports/2019-09-29-1.3660660](http://www.albayan.ae/across-the-uae/news-and-reports/2019-09-29-1.3660660) and [www.moca.gov.ae/en/media/news/honoring-the-winners-of-the-uzbek-mgovaward](http://www.moca.gov.ae/en/media/news/honoring-the-winners-of-the-uzbek-mgovaward)).

More broadly speaking, the GEEP team envisions the potential of government-to-government co-operation to be limitless in terms of the knowledge, skills and experience can be shared. As such, the GEEP is expected to on-board more governments as partners in the coming years.

## Challenges and lessons learned

The GEEP team has faced challenges in comparing evaluation metrics and KPIs between country engagements and across borders. To address this, the GEEP team collaborated with leading academics in the UAE and in partner countries to study the impact of each area of co-operation through international and local KPIs. The KPIs differ for each workstream and from one country to another in order to fully capture the relevant context.

The GEEP team has faced several challenges in setting up and managing the programme. First, differences in language, customs and time zones between the UAE and partner governments increased the practical barriers to effective co-ordination and collaboration. Second, differences in the capacities of individual governments required the GEEP team to adapt its approaches for each government. Lastly, the COVID-19 pandemic and its consequences, including more national lockdowns and less international travel, made in-person collaboration particularly difficult. Despite these difficulties, the GEEP has managed to grow its global network by moving many of its tailored development and modernisation programmes online. This shift has, in some circumstances, allowed the programme to become more user-centric, as the UAE can offer more tailored solutions and redirect saved travel costs effectively.

The key takeaway that the GEEP shared with OPSI and the MBRCGI was the importance of always focusing on end-users and achieving impact, and to build these objectives into the programme's vision. With this takeaway in mind, the GEEP team has learned two main lessons since the programme's inception in 2018. First, as mentioned above, the relationships that are cultivated through the programme are meant to be symbiotic partnerships, rather than client-driven exchanges. This is a two-way street when it comes to sharing knowledge, skills and experience through the programme. As such, the UAE continuously invests in its core GEEP team to update its approaches and learn from country engagements. Second, the GEEP team has learned that cultivating networks of governments, agencies and individuals is crucial to ensure that knowledge is shared effectively. Co-operation between policy and technical experts, as well as among partner countries, allows for skills-based solutions to be customised and adapted for each country and society.





# Unpacking findings and lessons

As can be seen in this report and the previous reports in this series, Governing Cross-Border Challenges<sup>108</sup> and Surfacing Insights and Experimenting Across Borders,<sup>109</sup> cross-border government collaboration can present a wide variety of benefits, including regulatory effectiveness, economic and administrative efficiency (OECD, 2021d), risk management across borders and enhanced knowledge flow (OECD, 2013), and economies of scale (OECD, 2021a).

There are also many benefits related to delivering and enabling cross-border solutions more specifically. In terms of delivery, the implementation of innovative cross-border services represents the culmination of different types of initiatives, structures and mechanisms uncovered in the work conducted by OPSI and the MBRCGI. This is where the full potential for impact can be met

and felt by citizens, residents and businesses across countries and jurisdictions. Enabling this delivery and supporting earlier phases of cross-border innovation is critical for sustaining the full lifecycle of innovative efforts in this space, with a particular emphasis on unlocking the free flow of data, achieving interoperability of systems and rules, and fostering the right skills and capacities.

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<sup>108</sup> See <https://cross-border.oecd-opsi.org/reports/governing-cross-border-challenges>.

<sup>109</sup> <https://cross-border.oecd-opsi.org/reports/surfacing-insights-and-experimenting-across-borders>.



While delivery of innovative cross-border services represents the pinnacle of what can be achieved – alongside ensuring foundational enablers are in place to make this and other cross-border processes possible – to date, there have been no indications of systemic or widespread action by governments towards this end. Rather, the research efforts, government and partner initiatives, and practical resources discussed or otherwise referenced in this series of reports represent a fairly comprehensive snapshot of the current state of cross-border government innovation. While the picture is promising and demonstrates incredible potential, the initiatives and approaches involved remain largely ad-hoc and are not yet designed for long-term sustainability. This raises the question: how can such approaches be encouraged and supported among governments and their partners?

Governments pursuing such efforts can benefit from an understanding of the challenges and the success factors associated with them. In their “Unpacking and lessons learned” chapters, the previous two reports provided in-depth discussion on challenges and success factors related to their respective subjects for cross-border efforts broader than innovation. Many of these same issues are also applicable to delivery and putting in place enablers. For instance, the importance of senior leadership support (Yu-Che Chen et al., 2019; Gil-Garcia and Sayogo, 2016; Sayogo, Gil-Garcia and Pardo, 2016), agreeing on common objectives and processes to ensure sustainability up front, funding (Makkonen et al., 2018), ensuring the participation of all relevant stakeholders, mutual benefit (Kurowska-Pysz, Castanho and Loures, 2018), focusing on end-user needs and benefits (Kalvet et al., 2018), prioritising adapting and re-interpreting

existing frameworks over creating new ones (Miörner et al. 2018), and building trust among partners and stakeholders (Sayogo et al., 2017) have all been shown to be key success factors for cross-border delivery. Common challenges include language and cultural barriers and a lack of information and insights on operations among partners (European Commission, 2021; Williams, Falch and Tadayoni, 2018; Miörner et al., 2018).

Success factors more targeted to the topics of this report include ensuring appropriate technical infrastructure and information systems, incorporating interoperable digital identity and working towards non-technical interoperability (e.g. of organisational, political and regulatory factors) – all of which are critical for delivering cross-border digital services (European Commission, 2021; Yu-Che Chen et al., 2019; Kalvet et al., 2018; Gil-Garcia and Sayogo, 2016). In fact, some research has shown that delivering a common agreed-upon baseline through taxonomies and classification can help overcome some language barriers and contribute to trust (OECD, 2013b). Other research also showed the need for a triggering mechanism to overcome inertia to shift away from the status quo, as many public sector organisations are unwilling to undertake major changes to build alignment and interoperability across borders unless forced (Kalvet et al., 2018). Yet, even the EU, which is generally more advanced than other bodies with regard to cross-border approaches, has developed only nascent knowledge transfer and innovation co-operation mechanisms (Makkonen et al., 2018).

## Advancing in delivering and enabling cross-border solutions: Insights from projects and practitioners

To better understand the specific benefits, challenges and success factors of cross-border government innovation initiatives, OPSI and the MBRCGI analysed 104 in-depth case studies received through the Call for Innovations, and in June 2021, held workshops with 141 multi-disciplinary practitioners and leaders from 43 countries with experience in cross-border innovation, in order to learn about their experiences (Figure 22).

Both exercises sought to identify the benefits, challenges and success factors associated with cross-border government innovation. The workshops also sought to gain participants' insights about possible ways to encourage advances in this field. Analysis of the top Call for Innovations submissions helped to demonstrate the potential for cross-border government innovation in terms of real impacts.<sup>110</sup> Figure 23 illustrates the top impacts of cross-border innovation projects, as identified by Call for Innovations submitters. (al., 2018).

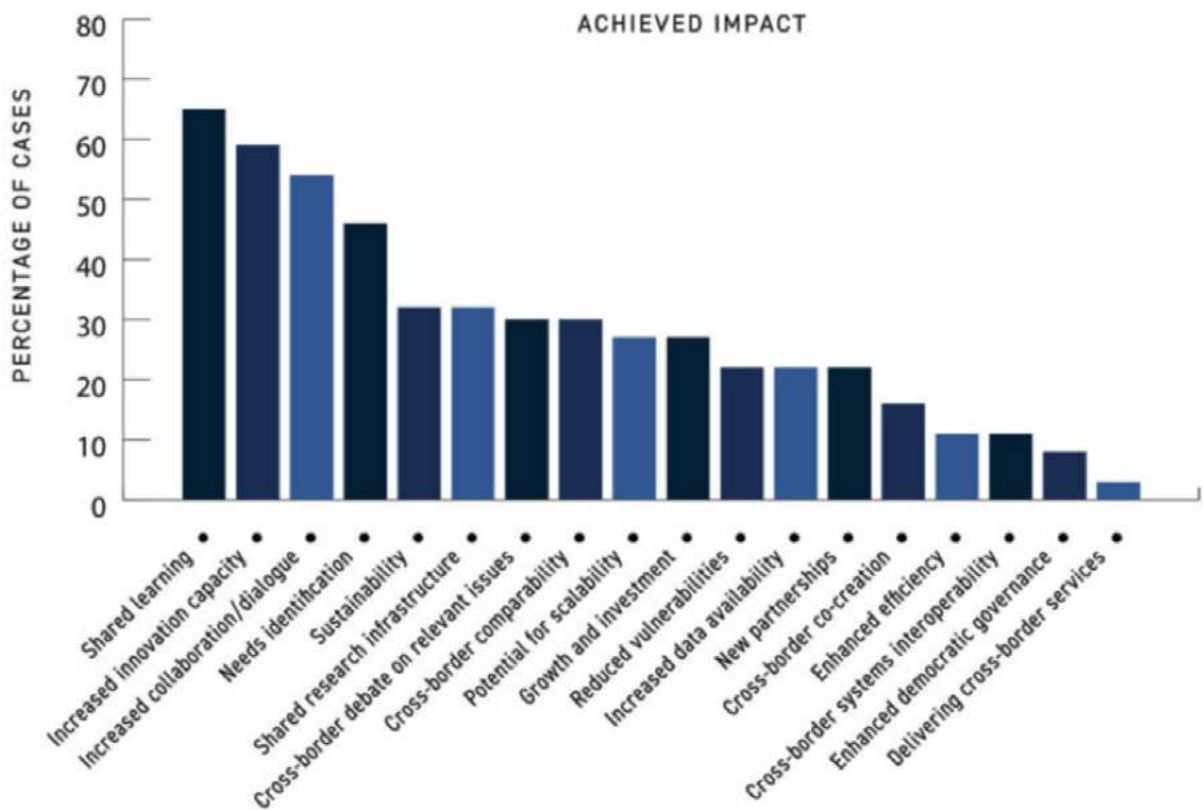
Figure 22: OPSI-MBRCGI workshop participants



<sup>110</sup> OPSI and the MBRCGI received 104 case studies from the Call for Innovations. All submissions and selected 37 cases underwent analysis in line with their level of relevance, novelty, maturity, impact, and clear and detailed documentation (see <https://oe.cd/Xborder-37>).

In particular, this analysis focused on the following fields: results, outcomes and impacts, challenges and failures, lessons learned and conditions for success.

Figure 23: Top cross-border innovation benefits discussed by Call for Innovations submitters



Source: OPSI analysis of 2021 Call for Innovations submissions.

The real-world impacts demonstrated by the Call for Innovations submissions and case studies show clearly that governments can both deliver innovative cross-border projects and put in place foundational enablers to allow cross-border government innovation to flourish. However, a number of key challenges hinder progress in delivering and enabling innovative cross-border approaches.

The first two reports discussed a number of cross-border innovation challenges which, in general terms, remain relevant for the present report. For instance, as discussed in the first report, navigating administrative boundaries and different frameworks is just as critical for delivery as it is for putting in place effective cross-border governance structures. And as discussed in the

second report, difficulty with scaling up successful experiments and pilots is a challenge that must be overcome in order to move from small-scale testing to fuller delivery and implementation. The Call for Innovations cases also surfaced a few additional challenges more specifically related to cross-border delivery and implementation. Most important among these were: a lack of training around executing cross-border projects (the second most-cited challenge behind funding), lack of data and the ability for meaningful interpretation, navigating privacy considerations and lack of a common evaluation framework for implemented projects.

As shown in Figure 24, the workshop participants identified issues similar to those that arose during the Call for Innovations and discussed in the previous two reports.

**Figure 24: Types of cross-border innovation delivery challenges discussed by workshop participants**



Note: The items are listed approximately in order of importance as voted on by the participants, with the most important listed at the top.

Source: OPSI/MBRCGI cross-border innovation workshops held on 3, 7 and 10 June 2021.

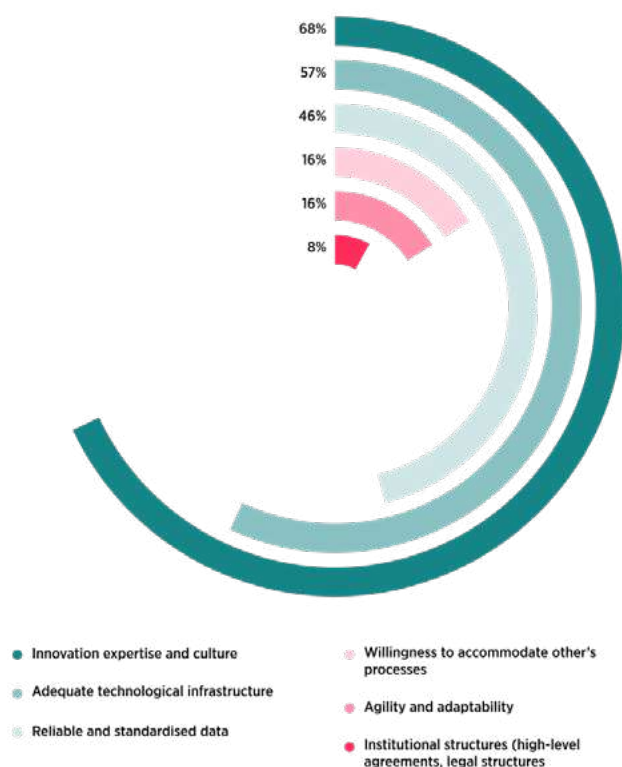
Given the integral nature of digital infrastructure and data in enabling delivery of cross-border public services, the workshops featured a dedicated discussion on surfacing challenges and success factors related to data sharing and digital interoperability. The challenges that most strongly resonated with participants involved:

- A lack of standards and standardisation (or in some cases, too many competing standards)
- Non-interoperable systems and infrastructure
- Poor data quality (especially among different partners)
- Outdated rules and regulations that hinder use of modern technologies
- Restrictive data nationalism/regionalism
- Misconceptions around GDPR and other data rules
- Lack of a clear and accepted ethics framework for data sharing
- Lack of legislation to provide a legal basis for sharing

These challenges can be difficult to overcome. However, governments can learn from those who have already achieved some success in innovating across borders. As with the success factors identified in the first report, the top Call for Innovations cases yielded a number of relevant factors that can contribute to successful outcomes for delivering and enabling innovative cross-border policies and services (see Figure 25). In fact, strong innovation expertise was the most cited among all success factors in the Call for Innovations submissions, with adequate technological infrastructure as the second most-cited success factor.

To help overcome the challenges associated with cross-border government innovation and to encourage success factors, workshop participants brainstormed actions that governments can take to promote cross-border delivery (see Figure 26). Participants suggested actions such as creating open-source standards and models, forging small cross-border research clusters and alliances, providing cross-border training for public servants, and further leveraging multi-lateral organisations such as the OECD to take a hands-on role in facilitating cross-border efforts and standards, among other ideas.

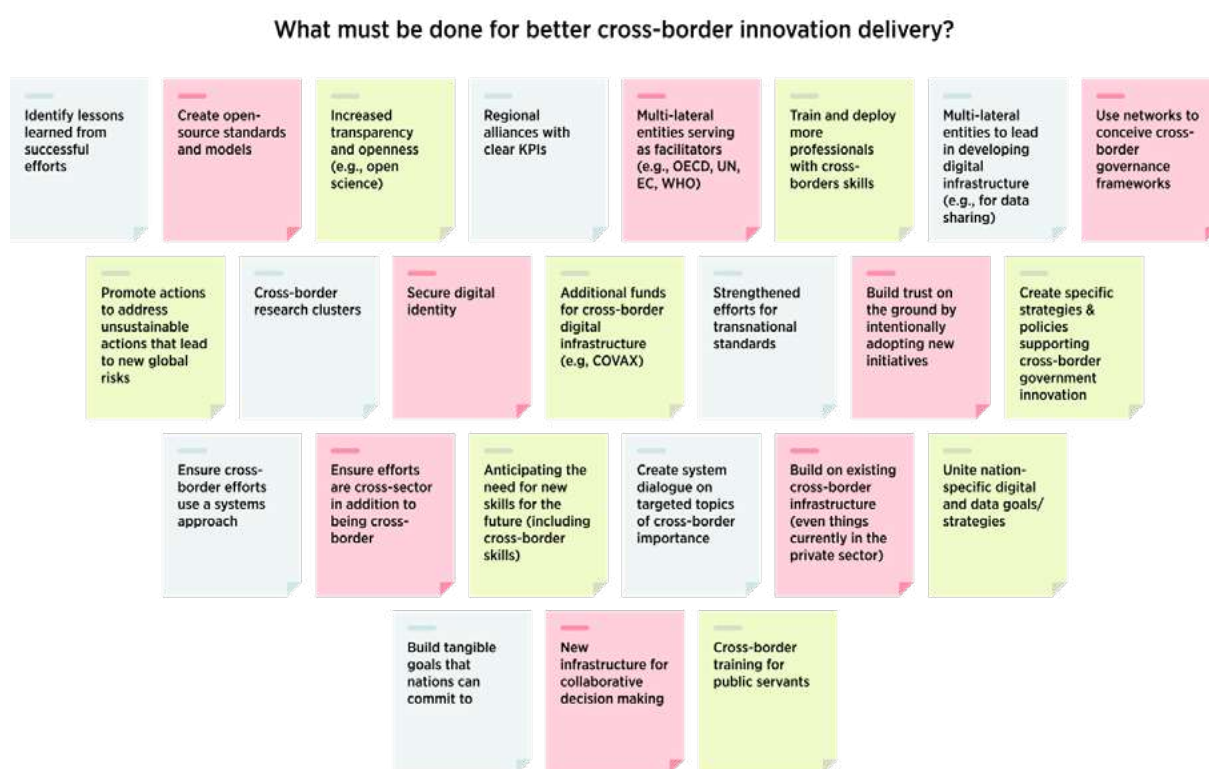
**Figure 25: Top relevant success factors discussed in the Call for Innovations cases**



Source: OPSI analysis of Call for Innovations cases.



Figure 26: Potential action items for cross-border delivery suggested by workshops participants



Source: OPSI/MBRCGI cross-border innovation workshops held on 3, 7 and 10 June 2021.

Given the integral nature of digital infrastructure and data, the workshops also featured a dedicated discussion on actions needed to better enable cross-border delivery through digital and data. The challenges and solutions that most strongly resonated with participants were as follows:

- Increase mutual understanding of data-sharing concepts and processes.
- Encourage national governments to revise regulations in order to better facilitate cross-border data sharing (in ways that also align transnational rules and agreement).
- Have the OECD create an open database of promising transnational data and digital approaches and practical resources to facilitate cross-border data sharing and digital service delivery.
- Have multilateral organisations such as the OECD and the UN bring together cross-sector actors to build consensus on governance mechanisms for data sharing and standards for important types of data.
- Develop a global standard operating procedure for data documentation.

- Create an agreed mandatory ethics framework for data sharing and privacy.
- Build a common transnational data marketplace that is consistent with existing rules.
- Engage with global corporations already implementing cross-border data sharing and interoperability to learn from them.
- Implement data literacy and training initiatives for public servants and the broader public.
- Identify five cross-border priority pilot issue areas to intentionally build out test cases.

Further work is needed to explore these proposed actions and to more fully understand the ways in which governments can seize potential benefits and overcome the challenges associated with cross-border government innovation. In the coming months, OPSI and the MBRCGI will be working with key experts and stakeholders to develop a playbook with practical guidance on how governments can support innovation through collaborating across borders and jurisdictions. In the meantime, OPSI and the MBRCGI have developed an initial set of recommendations, based on the findings of this report, which governments can use to strengthen their ability to deliver innovative cross-border policies and services, and put in place cross-cutting enablers to help cross-border government innovation flourish. These are presented in the next section.

# Recommendations

## **Collectively map out interoperability differences with partners and make plans for how they can be overcome.**

Technical and non-technical interoperability are must-haves for achieving the full potential of cross-border government innovation. Early in the exploration and design of cross-border efforts, partners should work together to actively map out areas of potential interoperability mismatch (e.g. legal, regulatory, data, digital maturity, regulation, etc.) and build out a plan for greater alignment. Such plans may

include approaches that ranging from heavier approach (e.g. new policies, infrastructure or legislative change) to ones that are lighter but still impactful (identifying and creatively using existing flexibilities, considering how existing rules can be interpreted in different ways). Governments should also consider how they can institute binding actions with the potential to catalyse progress away from the status quo.

## **Pursue a national public sector data strategy to serve as a foundation for progress and maturity in cross-border digital efforts.**

The strategy should encompass different aspects of data and would contribute to building a coherent approach to data at the national level. It should specifically consider and address provisions related to cross-border data flows, cross-border service delivery (when appropriate), interoperability (both technical and non-technical) and relevant enablers. Furthermore, strategies will be most successful when they include clear objectives and specific actions, measurable goals, responsible actors, realistic but ambitious timeframes, monitoring instruments and funding mechanisms, as appropriate.

OECD policy tools such as the OECD Framework for a Data-driven Public Sector and Data Governance (OECD, 2019b), the OECD Good Practice Principles for Data Ethics in the Public Sector (OECD, 2021j), and the OECD Recommendation for Enhancing the Access to and Sharing of Data<sup>111</sup> can be used as guidance for countries to self-assess the scope of the strategy in line with their own national contexts.

### **Integrate capabilities important for cross-border collaboration and innovation into competency frameworks, training and talent management programmes.**

Today's increasingly globalised world requires fit-for-purpose public services to embed global competence across policy development and service design functions. Identifying the right knowledge, skills and mind-sets, such as those discussed in this report, is a key first step to developing a civil service (not just a foreign service) capable of playing a role on the global stage. Such capabilities are also necessary to identify, co-create, design and implement innovative policy solutions targeted at complex, global challenges. Enhancing transnational experiences and mobility can also promote cross-pollination and upskilling of skills and approaches through hands-on action. In exploring how to integrate these skills, governments should consider relevant OECD frameworks presented in this report, as well as the extent to which the overall public sector system is currently positioned to integrate and leverage innovative practices, as seen in OPSI's Innovative Capacity of Public Sectors Framework.<sup>112</sup>

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<sup>111</sup> <https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0463>.

<sup>112</sup> See <https://oecd-opsi.org/work-areas/innovative-capacity>.

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